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Annotated List of Flowering
Plants and Ferns of Point Pelee,
Ont., and Neighbouring
Districts

BY
C. K. Dodge



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Annotated List of Flowering Plants and Ferns of Point Pelee, Ont., and Neigh- bouring Districts.

INTRODUCTION

As early as 1882, a distinguished and enthusiastic ornithologist, Wm E Saunders, of London, Ont , visited Point Pelee, and, after some investigation, learned that this place was on a direct line of north and south bird migration. Other ornithologists soon became interested, and an association was formed known as the Great Lakes Ornithological Club, the active members being Mr Saunders, P A Taverner, then of Detroit, Mich , now a member of the Geological Survey, Canada, Bradshae H. Swales, of Grosse Isle, Mich , James S Wallace, and James Fleming, of Ontario. The locality became so interesting that it was thought best to investigate, as far as possible, the general biota along the line of migration, P A Taverner suggesting that the writer undertake the listing of the flowering plants, ferns, and fern allies. The first opportunity came in 1910. After visiting Point Pelee it seemed that a careful study of the vegetation would be of interest and value in two ways. first, it might perhaps be of some service in the study of bird migration, second, it would add much to our knowledge of the distribution of the wild plants of western Ontario and Michigan, in which the writer has been engaged for some years. But it was clear that to serve these two purposes well, not only the plants of Point Pelee should be investigated and listed, but also those of the islands in Lake Erie lying immediately south and extending to the Ohio shore, and the whole of Essex county, as far as possible. The work was cheerfully undertaken, and this paper is the result.

LOCALITIES INVESTIGATED.

Essex county, Ontario, occupies a remarkable and important position, being the most southwesterly county in Ontario. It is bounded on the north by Lake St. Clair, on the west by Detroit river, and on the south by Lake Erie, it extends about forty miles east and west, and thirty miles north and south; its surface is generally level, with a high bank along Lake Erie, and a low bank along Lake St Clair. Point Pelee is at the southeastern corner of the county and projects about nine miles southward into Lake Erie. Lying in Lake Erie, perhaps less than ten miles to the southwest of this extreme point, is Pelee island, a part of Essex county, by far the largest island in the western part of Lake Erie, and containing about 13,000 acres. At the southern end of the island a narrow point, two and a half miles long, extends south towards the Ohio shore. South and west of this island, and not far away, are numerous smaller islands belonging mostly to the state of Ohio, and extending almost in a direct line close to the Ohio shore. The largest of these islands are Kelley, Put-in-Bay, Middle Bass, Rattlesnake, and Green islands. Projecting far out from the Ohio mainland in a northerly direction towards the islands named, are two or more peninsulas. From Point Pelee, by way of the islands and these peninsulas, lies the natural path of bird migration.

POINT PELEE

This locality, as far as was noticed, has been less disturbed by man and retains more of its primitive vegetation than any other equal area on the lake and river shores or anywhere in the county. A careful botanical survey of this place being the principal object, it will receive more particular attention. Point Pelee has been well described, and a map given, by P. A. Taverner and B. H. Swales in their work on "Birds of Point Pelee",¹ which appeared in 1908, and no further description will be attempted here than is necessary for botanical discussion. It is a triangular piece of land with its acute angle running

¹ Reprinted from the Wilson Bulletin, No. 59, June, 1907

about nine miles south into Lake Erie, the base at the north being about six miles wide. About nine-tenths of this tract was, and still is, mostly a very wet marsh lying between the

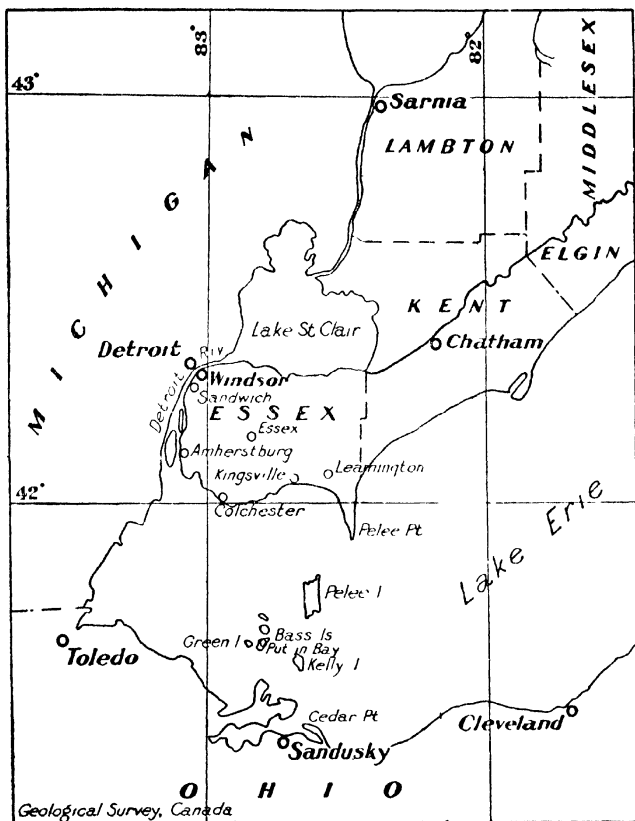


FIG. 1. Index of Point Pelee and vicinity

east and west beaches. Formerly it was famous for water birds and one of the best spots known for duck shooting, but in recent years, particularly near the base, it has been quite

extensively ditched and pumping stations established, draining and fitting a part of it for cultivated crops. Ultimately, most of the marsh will, no doubt, be reclaimed, and already its importance for duck hunting has greatly diminished. With these changed conditions much of the primitive vegetation has disappeared and species adapted to drier ground have taken possession, but here and there many large spots are still to be found showing conclusively the original plant life, which was quite uniform and limited in species.

The wetter part was covered more or less with common cat-tail flag, Indian rice (*Zizania palustris* L.¹) in great abundance, one of our largest and most striking native grasses, often over ten feet high, swamp horsetail, broad-fruited bur reed, broad-leaved arrow head, rice cut grass, common reed, western bulrush, slender sedge, swamp loosestrife, mermaid weed, rush aster, and tall tickseed sunflower (*Bidens trichosperma* (Michx.) Britton, var. *tenuloba* (Gray) Britton), and in spots, reed canary grass and northern manna grass (*Glyceria septentrionalis* Hitchc.) are abundant. Within the marsh limits are several ponds and small lakes with characteristic plants, these being several species of waterweeds, wild celery, yellow water lily, white water lily, water shield, and slender najas. On the marsh border, especially along the west side, are, in great abundance, sweet flag, poison sumach, and button-bush, twenty feet high and more. On the east side is a narrow low sandy beach, fringed with shrubs and trees towards the south. On the west side the beach is wider, backed by sand dunes covered with shrubs and trees. It is at first, beginning at the north, a very narrow strip popularly known as "the narrows", growing wider towards the south, until the east and west beaches with their wooded strips come together about two miles north of the extreme southern point, forming from there on to the south, flat sandy ground, covered with timber, but bordered on the east side by a strip of damp rich woods. Outside of the marsh the land is mostly very sandy, though here and there it is under cultivation. The road from Leamington passes along the so-called narrows and

¹Two species of Indian rice have been lately recognized. *Zizania aquatica* L., the smaller form, was not noticed.

terminates at the extreme southern point. Going along this road the last of May, 1910, the writer never witnessed a more beautiful display of the wild columbine in full bloom. On this narrow strip between the west beach and the marsh, the black walnut, one of our finest trees, usually found in rich open woods or on river and creek bottoms, is frequent and apparently thrifty in pure sand, and the hackberry is very common. These two trees are very plentiful about half-way to the south point. Here also the blue ash was noticed, with its peculiar square stems, and the honey locust mostly on the middle and upper beach, perhaps fifty trees or more quite out of their natural habitat, yet apparently thrifty. The dominant tree of the timbered portion, however, is the red cedar, and it is more or less abundant along the whole west side. About halfway to the extreme southern point is a clump of fair-sized white pine trees, and this pine is occasionally seen in other places. Red oak and yellow-barked oak (*Quercus velutina* Lam.) are common; the chestnut oak occasional.

Prominent among the beach herbaceous plants is the clammy-weed which has crept into gardens and fields and become a pernicious weed. American scarrocket and sand grass are pretty evenly distributed along both beaches. On the west side, the shrubs, fragrant sumach, and low juniper, are very abundant and efficacious in holding down the sand dunes and beach sand against the action of the wind. The sea sand reed, one of the best known sand binders, very efficacious in resisting the action of both wind and wave, appears in spots on the east side, but is not anywhere abundant. The long-leaved reed grasses, another noted sand binder, are not at all common. In the strip of rich damp woods on the east side and south of the big marsh, are found the usual trees and herbaceous plants that occur where mesophytic conditions prevail—white ash, black ash, American elm, red maple, basswood, cottonwood, bur oak, swamp white oak, sycamore, peach-leaved willow, Virginian knotweed, bloodroot, purple cress, and cardinal flower. The honey locust, shrubby trefoil, locally called wahoo, western prickly pear, rough-leaved cornel, red mulberry, and papaw, very probably reach their northern limit here, the last two fast dis-

Viburnum Lentago L. (NANNYBERRY.)

Frequent at Point Pelee in damp open woods, and on Pelee island. Kelley and Middle Bass islands and Ohio shore.

Viburnum prunifolium L. (BLACK HAW.)

Common on Ohio shore.

Sambucus canadensis L (COMMON ELDER)

Frequent at Point Pelee in rich open or slightly shaded ground Islands and Ohio shore

VALERIANACEAE (VALERIAN FAMILY.)

Valeriana pauciflora Michx (LARGE-FLOWERED VALERIAN.)

Ohio shore.

DIPSACACEAE (TEASEL FAMILY)

Dipsacus sylvestris Huds. (WILD TEASEL.)

In open ground and on roadsides along Lake Erie shore. Kelley island and Ohio shore

CUCURBITACEAE (GOURD FAMILY.)

Sicyos angulatus L (ONE-SEEDED BUR CUCUMBER.)

Occasional at Point Pelee as a native plant in damp thickets, and as a weed in yards and fields. Green, Rattlesnake, and Put-in-Bay islands and Ohio shore.

Echinocystis lobata (Michx) T and G. (WILD BALSAM APPLE)

Occasional at Point Pelee as an escape near dwellings. Islands and Ohio shore

CAMPANULACEAE (BLUEBELL FAMILY.)

Specularia perfoliata (L.) A. DC. (VENUS'S LOOKING-GLASS.)

Pelee island. Kelley and Put-in-Bay islands and Ohio shore.

Campanula americana L. (TALL BELLFLOWER.)

Frequent at Point Pelee in damp shaded ground, especially on the borders of the big marsh along "the narrows."

Common on the islands and Ohio shore.

Campanula rotundifolia L (HAREBELL.)

Occasional on bluffy shores of Lake Erie and on rocky shores of islands, except Kelley island. Ohio shore.

Campanula aparinoides Pursh (MARSH BELLFLOWER.)

Common at Point Pelee in and about the big marsh.

Islands and Ohio shore

LOBELIACEAE (LOBELIA FAMILY)

Lobelia cardinalis L (CARDINAL FLOWER)

In rich open woods at Point Pelee Islands and Ohio shore

Lobelia siphilitica L (GREAT LOBELIA)

Frequent at Point Pelee in and about the big marsh.

Kelley, Middle Bass, and North Bass islands, and Ohio shore

Lobelia spicata Lam (PALE SPIKED LOBELIA.)

Frequent on Pelee island

Lobelia Kalmii L (BROOK LOBELIA.)

Islands and Ohio shore.

Lobelia inflata L. (INDIAN TOBACCO)

Occasional along Lake Erie shore. Put-in-Bay island.

COMPOSITAE (COMPOSITE FAMILY.)

Vernonia noveboracensis Willd (NEW YORK IRONWEED.)

Pelee island (Macoun.) (See Gray's New Manual of Botany, Illustrated, p 780)

Vernonia fasciculata Michx (WESTERN IRONWEED.)

Ohio shore.

Vernonia altissima Nutt. (TALL IRONWEED.)

Near Essex Centre. Contributions from the Herbarium of the Geological Survey of Canada, IV, p. 202. Ohio shore.

appearing. It is perhaps quite remarkable that only one member of the Heath family, bearberry, was noticed; it is quite plentiful and serves as a very good sand binder, helping to hold the sand dunes in place on the west side. The American cranberry existed in the big marsh before drainage and destruction by fire.

Pelec island, by far the largest island in the western part of Lake Erie, was looked over as carefully as time would permit. It is generally flat, the rock often having only a thin covering of soil. Much of the land has been under cultivation. The soil is generally good, and formerly the grape and peach were extensively cultivated, but both of these have in recent years been neglected, and much attention paid to raising tobacco. Here the Kentucky coffee-tree, redbud and trumpet creeper, the last quite common, seem to reach their northern limit.

A knowledge of the plants on the other islands has been made possible by the careful botanical examination of all those islands south of the International Boundary to the Ohio shore and the points and peninsulas of the shore, by Prof. E. L. Moseley, of Sandusky, Ohio, who published his conclusions and catalogue of plants in 1899.¹ This publication is a work of great value, and the author has kindly permitted me to use the results of his labour. Every plant mentioned as on or about "the islands" or any one of them, along the Ohio shore, is taken from his list.

NUMBER OF SPECIES NOTED IN DIFFERENT LOCALITIES

The number of plants noted on Point Pelee is 583, on Pelee island 408, on both 623, there being about 40 species on the island not yet found on the point. These figures are only close approximations. On the islands south of the International Boundary, Professor Moseley found 612 species, 176 of which have not yet been found on Point Pelee or the island. The apparent absence of this rather large number of species is owing,

¹ A Catalogue of Flowering Plants and Ferns Growing Without Cultivation in Erie county, Ohio, and the peninsula and islands of Ottawa county. By E. L. Moseley.

in the main, to the restricted area examined, for many of the plants noticed on the islands by Professor Moseley and not found on Point Pelee and the adjacent large island, are known to be frequent and often abundant in western Ontario, such as *Cystopteris bulbifera* (L.) Bernh., *Allium tricoccum* Ait., *Erythronium americanum* Kerr., *Trillium erectum* L., *Ranunculus fascicularis* Muhl., *Hydrastis canadensis* L., *Jeffersonia diphylla* (L.) Pers., *Arabis canadensis* L., and many others.¹

Professor Moseley detected on Keiley island, alone, 461 species, and on Put-in-Bay island, 439 species, while, as before stated, only 408 were noted and reported on Pelee island, whose area is far greater than the combined area of all the other mentioned islands. It is very evident, therefore, that many of the plants of Pelee island have not yet been noted and reported, showing clearly that there is still work for a local botanist. There should be found on this island about 650 or 700 species growing without cultivation, that is from 242 to 292, or about 300 more than is reported in this paper. It is very probable, however, that no plants will hereafter be found on Pelee island not already reported from Point Pelee or the other islands of Lake Erie to the south, or in other parts of Essex county.

On the preparation of the following list the writer has made use of every available source of information. The nomenclature of "Gray's New Manual of Botany, Illustrated" has been followed, unless otherwise mentioned. Many common names have been taken from Britton and Brown's illustrated work. The writer is much indebted to Agnes Chase, scientific assistant in systematic agrostology, Bureau of Plant Industry, United States Department of Agriculture, for examining the various species of grasses, and to Kenneth K. Mackenzie, of New York city, for inspecting all species of *Cyperaceae*, *Junci*, and many other plants.

¹ Many of the above-named plants have since been noticed in other parts of Essex county and inserted in the list.

ANNOTATED LIST.

POLYPODIACEAE (FERN FAMILY)

Polypodium vulgare L (COMMON POLYPODY)

Kelly island Scarce

Phegopteris hexagonoptera (Michx) Fée (BROAD BEACH FERN)

In rich woods near Windsor (Burgess)

Phegopteris Dryopteris (L) Fée (OAK FERN)

Frequent about Windsor (F P Cravin)

Adiantum pedatum L (MAIDENHAIR)

Common in rich shaded ground about Windsor Ohio shore

Pteris aquilina L (COMMON BRAKE)

Frequent on Point Pelee, Pelee island, and in Essex county generally

Pellaea atropurpurea (L) Link (CLIFF BRAKE)

Kelley and Put-in-Bay islands, and Ohio shore

Asplenium Trichomanes L (MAIDENHAIR SPLEENWORT)

Ohio shore

Asplenium platyneuron (L) Oakes (EBONY SPLEENWORT)

Ohio shore

Asplenium angustifolium Michx (NARROW-LEAVED SPLEENWORT)

Rich woods near Amherstburg. (MacLagan) Ohio shore

Asplenium Filix-femina (L) Bernh (LADY FERN)

Ohio shore and no doubt throughout Essex county

Camptosorus rhizophyllus (L) Link (WALKING FERN)

Kelley island and Ohio shore

Polystichum acrostichoides (Michx) Schott (CHRISTMAS FERN)

Frequent about Windsor (F P Cravin)

Aspidium Thelypteris (L) Sw (MARSH SHIELD FERN)

Very common in marshy open ground or slightly shaded places at Pelee islands and Ohio shore

Aspidium noveboracense (L.) Sw (NEW YORK FERN.)

Low woods and thickets near Windsor

Aspidium marginale (L.) Sw

Frequent in rich woods about Windsor (F P Cravin.)

Aspidium Goldianum Hook (GOLDIE'S FERN)

In rich woods near Amherstburg (MacLagan)

Aspidium cristatum (L.) Sw (CRESTED SHIELD FERN.)

Occasional in swampy places on the east side of Point Pelee and about Windsor No doubt frequent throughout other parts of Essex county

Aspidium spinulosum (O F Muller) Sw (SPINULOSE SHIELD FERN)

Frequent at Point Pelee in rich woods, islands, and Ohio shore No doubt frequent throughout Essex county

Aspidium spinulosum (O F Muller) Sw, var **intermedium** (Muhl) D C Eaton (SPINULOSE SHIELD FERN)

In rich woods on the east side of Point Pelee and on Pelee island Probably throughout Essex county

Cystopteris bulbifera (L.) Bernh (BULBLET CYSTOPTERIS)

Lake Erie islands

Cystopteris fragilis (L.) Bernh (BRITTLE FERN)

... ? Kelley island and Ohio shore

Onoclea sensibilis L (SENSITIVE FERN)

Common in damp open ground, woods, and thickets on the east side of Point Pelee and on Pelee island Not noticed on the other islands, but common on the Ohio shore

Onoclea Struthiopteris (L.) Hoffm (OSTRICH FERN)

Frequent in Essex county (F P Cravin)

OSMUNDACEAE (FLOWERING FERN FAMILY)

Osmunda regalis L (FLOWERING FERN)

Common in damp open ground about Windsor

Osmunda Claytoniana L (CLAYTON FERN)

Frequent about Windsor

Osmunda cinnamomea L (CINNAMON FERN)

Common about Windsor

OPHIOGLOSSACEAE (ADDER'S TONGUE FAMILY.)

Ophioglossum vulgatum L (ADDER'S TONGUE)

Cedar point, Ohio shore Probably frequent in Essex county, but overlooked

Botrychium simplex E Hitchcock (LITTLE GRAPE FERN)

Noticed at Cedar point, Ohio shore

Botrychium ramosum (Roth) Aschers (MATRICARV GRAPE FERN)

At Cedar point, Ohio shore

Botrychium virginianum (L) Sw (RATTLESNAKE FERN)

Frequent in rich woods and thickets on the east side of Point Pelee and on Pelee island Very probably common throughout Essex county

EQUISETUM (HORSETAIL FAMILY)

Equisetum arvense L. (COMMON HORSETAIL)

In dry or damp open ground at Point Pelee and on Pelee island Common throughout Essex county Kelley island and Ohio shore

Equisetum sylvaticum L (WOOD HORSETAIL)

Occasional in damp shaded places on the east side of Point Pelee and on Pelee island No doubt throughout Essex county

Equisetum fluviatile L (Pipes) (SWAMP HORSETAIL.)

Common about ponds, in ditches, shallow water, and wet places, especially on the big marsh at Point Pelee Also on Pelee island, and probably throughout Essex county

Equisetum laevigatum A Br (SMOOTH SCOURING RUSH)

Reported as noticed along road-sides near Windsor. According to the late A A Eaton, this species is very doubtful in western Ontario and Michigan, it being often mistaken for *E. hyemale intermedium*. A A Eaton

Equisetum hyemale L (SCOURING RUSH)

Frequent in dry open places among cedars at Point Pelee
and on Pelee island No doubt frequent throughout
Essex county

Equisetum hyemale L., var **intermedium** A A Eaton.
(SCOURING RUSH)

Noticed near Windsor According to the late A A.
Eaton, this is often confused with E. laevigatum

Equisetum hyemale L., var **robustum** (A Br) A A Eaton
(STOUT SCOURING RUSH)

Put-in-Bay and Kelley islands and Ohio shore

Equisetum variegatum Schleich (VARI-GATED Equisetum)

Abundant on borders of ponds, east side of Point Pelee
Also islands and Ohio shore

SELAGINELLACEAE (SELAGINELLA FAMILY)

Selaginella apus (L) Spring (CREEPING SELAGINELLA)

Damp open places along Detroit river Probably through-
out Essex county, but overlooked

TAXACEAE (YEW FAMILY)

Taxus canadensis Marsh (AMERICAN YEW)

Among cedars and pines on the west side of Point Pelee
Apparently rare (Wallace Tilden) Rocky shores
of the islands

PINACEAE (PINE FAMILY)

Pinus Strobus L (WHITE PINE)

Usually scattering at Point Pelee A grove of large
trees about halfway down to extreme point Oc-
casional in other parts of the county Ohio shore

Pinus sylvestris L (SCOTCH FIR)

Fine specimens in cultivation on north shore of Lake
Erie, but not noticed as spreading

Larix laricina (Du Roi) Koch (AMERICAN LARCH)

Occasional in swampy places, but formerly more abundant

Juniperus communis L (COMMON JUNIPER)

A few trees at Point Pelee might perhaps be taken for the species Ohio shore

Juniperus communis L, var **depressa** Pursh (LOW JUNIPER)

Abundant on the west side of Point Pelee along the beach and on near-by sand ridges, acting as an efficient sand binder against the action of the wind Fruit usually very abundant Also on the extreme southern point of Pelee island Ohio shore

Juniperus virginiana L (RED CEDAR)

Abundant and the dominant tree in many places on the west side of Point Pelee from "the narrows" to the extreme southern point Also on Pelee island and scattering along north shore of Lake Erie to the Detroit river Abundant on the islands and Ohio shore

TYPHACEAE (CAT-TAIL FAMILY)

Typha latifolia L (COMMON CAT-TAIL)

Abundant in ditches and the big marsh at Point Pelee and on Pelee island, and in swampy places throughout Essex county Also islands and Ohio shore

Typha angustifolia L (NARROW-LEAVED CAT-TAIL)

Frequent and often plentiful on borders of the big marsh at Point Pelee North Bass island and Ohio shore

SPARGANIACEAE (BUR REED FAMILY)

Sparganium eurycarpum Engelm (BROAD-FRUITED BUR REED)

Very common in and about the big marsh, in ditches and very wet places at Point Pelee and on Pelee island. Middle Bass island and Ohio shore

Sparganium americanum Nutt, var **androcladum** (Engelm) Fernald and Eames (BRANCHING BUR REED)

Occasional in and about the big marsh at Point Pelee
Middle Bass island and Ohio shore

NAJADACEAE (PONDWEED FAMILY)

Potamogeton natans L. (COMMON FLOATING PONDWEED)

Ponds and small lakes in the big marsh at Point Pelee
and on Pelee island Common about the other
islands

Potamogeton americanus C and S (LONG-LEAVED PONDWEED)

Occasional in water on the east side of Point Pelee
Common about the islands

Potamogeton amplifolius Tuckerm (LARGE-LEAVED PONDWEED)

In water along Ohio shore

Potamogeton heterophyllus Schreb (VARIOUS-LEAVED PONDWEED)

Occasional in water on east side of Point Pelee Near
Windsor (Macoun) Ohio shore

Potamogeton heterophyllus Schreb, forma **maximus** Moench (VARIOUS-LEAVED PONDWEED)

North Bass island and Ohio shore

Potamogeton lucens L (SHINING PONDWEED)

In water about the islands and along Ohio shore

Potamogeton Richardsonii (Benn) Rydb (RICHARDSON PONDWEED)

In water at the north end of east side of Point Pelee
Islands and Ohio shore

Potamogeton perfoliatus L (CLASPING-LEAVED PONDWEED)

In water along Ohio shore

Potamogeton zosterifolius Schumacher (EEL-GRASS PONDWEED)

Occasional in the big ditches at north end of Point Pelee
on east side Common about the islands and along
Ohio shore.

Potamogeton Hillii Morong (HILL'S PONDWEED)

Along the Ohio shore

Potamogeton Friesii Rupr (FRIES' PONDWEED)

In big ditches on east side of north end of Point Pelee.

Also about Put-in-Bay island and along Ohio shore

Potamogeton pusillus L (SMALL PONDWEED)

In water along Ohio shore

Potamogeton foliosus Raf (LEAFY PONDWEED)

Frequent at the north end of Point Pelee on the east side. Also about Put-in-Bay and North Bass island.

Potamogeton foliosus Raf, var **niagarensis** (Tuckerm)

Morong (LEAFY PONDWEED)

About North Bass island and along Ohio shore

Potamogeton pectinatus L (FENNEL-LEAVED PONDWEED)

Occasional at north end of Point Pelee on the east side

Abundant about the islands and along Ohio shore

Potamogeton interruptus Kitaibel (INTERRUPTED PONDWEED)

About Put-in-Bay island

Najas flexilis (Willd) Rostk and Schmidt (SLENDER NAJAS)

In big ditches at north end of Point Pelee on east side

Also about the islands

Najas flexilis (Willd) Rostk and Schmidt, var **robusta**

Morong (LARGER NAJAS)

In water along Ohio shore

Najas gracillima (A Br) Magnus (THREAD-LIKE NAJAS)

In water along Ohio shore

JUNCAGINACEAE (ARROW GRASS FAMILY)

Triglochin maritima L (SEASIDE ARROW GRASS)

Frequent at Point Pelee in wet sand or marshy open ground in and on borders of big marsh

ALISMACEAE (WATER-PLANTAIN FAMILY)

Sagittaria latifolia Willd (BROAD-LEAVED ARROW-HEAD),
(SWAN-ROOT)

Common at Point Pelee in ditches and wet places on the big marsh Islands and Ohio shore

Sagittaria arifolia Nutt ((ARUM-LEAVED ARROW-HEAD)

Along the Ohio shore

Sagittaria heterophylla Pursh (SESSILE-FRUITING ARROW-HEAD)

Borders of small lakes in big marsh Put-in-Bay island and Ohio shore

Sagittaria graminea Michx (GRASS-LEAVED SAGITTARIA)

Along Ohio shore

Alisma Plantago-aquatica L (WATER PLANTAIN)

Abundant in ditches and very wet places at Point Pelee and throughout Essex county Also islands and Ohio shore

HYDROCHARITACEAE (FROG'S BIT FAMILY)

Elodea canadensis Michx (WATER-WEED)

Common in the ponds and small lakes of the big marsh at Point Pelee and on Pelee island Also Kelley and Put-in-Bay islands and Ohio shore

Vallisneria spiralis L (WILD CELFREY)

Common at Point Pelee in the ponds and small lakes of the big marsh Abundant about the islands and along Ohio shore

GRAMINEAE (GRASS FAMILY)

Andropogon scoparius Michx (BROOM BEARD GRASS)

Occasional at Point Pelee in open dry ground, and on Pelee island Ohio shore

Andropogon furcatus Muhl (FORKED BEARD GRASS)

Occasional at Point Pelee in dry open ground Ohio shore.

Sorghastrum nutans (L.) Nash (INDIAN GRASS)

On sandy open ground at Point Pelee Apparently rare. Ohio shore.

Digitaria humifusa Pers (SMALL CRAB GRASS)

Occasional at Point Pelee in sandy ground and on Pelee island North Bass island and Ohio shore

***Digitaria sanguinalis* (L.) Scop (CRAB GRASS)**

A common weed at Point Pelee and on Pelee island
The other islands and Ohio shore

***Panicum capillare* L (OLD-WITCH GRASS)**

A common weed in gardens, fields, and waste places at
Point Pelee and on Pelee island The other islands
and Ohio shore

***Panicum flexile* (Gattinger) Scribn (WIRY PANICUM)**

Common in moist sandy ground at the north end of Point
Pelee on east side

***Panicum philadelphicum* Bernh (WOOD WITCH GRASS)**

Noticed at Point Pelee in dry sandy ground among red
cedars (A. B. Klugh) Ohio shore

***Panicum miliaceum* L (EUROPEAN MILLET)**

Ohio shore Probably also as an escape in Essex county

***Panicum virgatum* L (SWITCH GRASS)**

Usually in tufts on dry sandy ground Abundant along
the upper east beach of Point Pelee Also Kelley
island and Ohio shore

***Panicum agrostoides* Spreng (ACROSTIS-LIKE PANICUM)**

North Bass island

***Panicum depauperatum* Muhl (STARVED PANICUM)**

Occasional at Point Pelee in dry poor ground Ohio
shore

***Panicum dichotomum* L (FORKED PANICUM)**

Frequent in woods at Point Pelee (Burgess) Also
on islands

***Panicum huachucae* Ashe (HAIRY PANICUM)**

Occasional in sandy ground at Point Pelee No doubt
to be found throughout Essex county

***Panicum scoparium* Lam (SCRIBNER'S PANICUM)**

Occasional at Point Pelee in dry open ground Prob-
ably throughout Essex county On islands and Ohio
shore

***Panicum clandestinum* L (HISPID PANICUM)**

Cedar point, Ohio shore

Echinochloa crusgalli (L.) Beauv (BARNYARD GRASS)

A weed at Point Pelee and probably throughout Essex county, in gardens, fields, and waste places, preferring damp ground Also on islands and Ohio shore

Echinochloa Walteri (Pursh) Nash (SALT-MARSH COCK-SPUR GRASS)

Common in damp places near creeks flowing into Lake Erie along north shore Ohio shore

Setaria glauca (L.) Beauv (FOXTAIL)

A common weed throughout Essex county in gardens and fields Islands and Ohio shore

Setaria viridis (L.) Beauv (GREEN FOXTAIL)

Throughout Essex county as a weed in cultivated fields Ohio shore

Setaria italica (L.) Beauv (ITALIAN MILLET)

Occasional as an escape throughout Essex county On Middle Bass and North Bass islands and Ohio shore

Cenchrus carolinianus Walt (SANDBUR)

Occasional as a roadside weed throughout Essex county Islands and Ohio shore

Zizania palustris L (INDIAN RICE)

Very abundant and rank in spots on the big marsh at Point Pelee Also along low wet banks of streams flowing into Lake Erie and about Lake St Clair Also on Pelee island, Middle Bass island, and Ohio shore The smaller form *Z. aquatica* L. not noticed

Leersia virginica Willd (WHITE GRASS)

Frequent at Point Pelee in rich open woods on the east side Also Kelley island and Ohio shore

Leersia oryzoides (L.) Sw (RICE CUT GRASS)

Common at Point Pelee along ditches and in wet places, especially in the big marsh Also on islands and Ohio shore

Phalaris arundinacea L (REED CANARY GRASS)

Occasional at Point Pelee in wet open places, especially in the big marsh Middle Bass island and Ohio shore

Hierochloa odorata (L.) Wahlenb (VANILLA GRASS)

Grassy places along Detroit river

Milium effusum L. (MILLET GRASS)

In rich open woods on the east side of Point Pelee.

Oryzopsis pungens (Torr) Hitchc (SLENDER MOUNTAIN RICE.)

In dry open ground about Windsor

Oryzopsis asperifolia Michx (WHITE-GRAINED MOUNTAIN RICE)

In shaded ground near Windsor

Oryzopsis racemosa (Sm) Ricker (BLACK-FRUITED MOUNTAIN RICE)

Put-in-Bay island Apparently rare

Stipa spartea Trin (PORCUPINE GRASS)

Sandy ground, Ohio shore

Muhlenbergia sobolifera (Muhl) Trin (ROCK MUHLENBERGIA.)

Ohio shore

Muhlenbergia sylvatica Torr (WOOD MUHLENBERGIA)

Occasional on borders of woods, east side of Point Pelee.

Middle Bass island

Muhlenbergia foliosa Trin (MINNESOTA MUHLENBERGIA)

Along edge of big marsh at Point Pelee Apparently not common

Muhlenbergia mexicana (L) Trin (MEADOW MUHLENBERGIA)

Edge of woods on east side of Point Pelee Apparently infrequent Islands and Ohio shore

Muhlenbergia racemosa (Michx) BSP (MARSH MUHLENBERGIA)

Frequent at Point Pelee in damp open ground

Muhlenbergia Schreberi J F Gmel (NIMBLE WILL)

Common at Point Pelee in dry sandy ground under red cedars and other trees Islands and Ohio shore

Brachyelytrum erectum (Schreb) Beauv (BRACHYELYTRUM)

Ohio shore

Phleum pratense L (TIMOTHY)

Occasional everywhere as an escape. Islands and Ohio shore.

Alopecurus geniculatus L, var **aristulatus** Torr (FLOATING FOXTAIL)

In very wet open places at Point Pelee and on Pelee island Islands and Ohio shore

Sporobolus vaginiflorus (Torr) Wood (SHEATHED RUSH GRASS)

Kelley and Put-in-Bay islands and Ohio shore

Sporobolus neglectus Nash (SMALL RUSH GRASS)
Ohio shore

Sporobolus cryptandrus (Torr) Gray (SAND DROPSEED)

Frequent at Point Pelee on the beaches and sand ridges
Ohio shore

Agrostis alba L (RED TOP)

Common at Point Pelee in damp open meadow-like ground and occasional in dry sandy places Common on the islands and Ohio shore

Agrostis hyemalis (Walt) BSP (HAIR GRASS)

Occasional at Point Pelee in dry open ground Put-in-Bay and Middle Bass islands and Ohio shore

Agrostis perennans (Walt) Tuckerm (THIN GRASS)
Ohio shore

Calamovilfa longifolia (Hook) Hack (LONG-LEAVED REED GRASS)

On the upper beach at Point Pelee but not abundant
When abundant it is one of the best sand binders against the action of wind

Calamagrostis canadensis (Michx) Beauv (BLUE-JOINT GRASS)

Abundant at Point Pelee in spots in the big marsh and on Pelee island. Middle Bass and North Bass islands and Ohio shore

Ammophila arenaria (L) Link. (SEA SAND-REED.)

A characteristic beach grass Noticed as plentiful in spots on the east side of Point Pelee, but infrequent on the west side When abundant, it is one of the most efficient sand binders against both wind and wave. Ohio shore.

Cinna arundinacea L (WOOD REED GRASS)

In damp woods on the east side of Point Pelee Apparently infrequent Ohio shore

Sphenopholis obtusata (Michx) Scribn (BLUNT-SCALED EATONIA)

North Bass island and Ohio shore

Sphenopholis pallens (SPRING) Scribn (PENNSYLVANIA EATONIA)

Islands and Ohio shore

Koeleria cristata (L.) Pers (KOEFLERIA)

Occasional at Point Pelee on dry sandy ground Ohio shore

Danthonia spicata (L.) Beauv (COMMON WILD-OAT GRASS)

Frequent at Point Pelee on dry sandy ground Put-in-Bay island and Ohio shore

Spartina Michauxiana Hitchc (SLOUGH GRASS)

Occasional at Point Pelee in marshy open ground and on Pelee island, Middle Bass island, and Ohio shore
Formerly included with *S. cynosuroides* (L.) Roth which is now claimed to be an eastern species

Bouteloua curtipendula (Michx) Torr (RACEMED BOUTELOUS)

Ohio shore

Eleusine indica Gaertn (GOOSE GRASS)

Ohio shore

Phragmites communis Trin (REED)

Abundant in spots on the big marsh at Point Pelee, and on Pelee island Ohio shore

Tridens flavus (L.) Hitchc (TALL RED TOP)

Ohio shore

Triplasis purpurea (Walt) Chapm (SAND GRASS)

Common in sand on the beach at Point Pelee, Kelley island, and Ohio shore

Eragrostis hypnoides (Lam) BSP (CREEPING ERAGROSTIS)

Ohio shore

Eragrostis Frankii (Fisch, Mey, and Lall) Steud (FRANK'S ERAGROSTIS)

Ohio shore

Eragrostis capillaris (L.) Nees (CAPILLARY ERAGROSTIS)
Ohio shore

Eragrostis pilosa (L.) Beauv (TUFTED ERAGROSTIS)
Plentiful at Point Pelee in dry sandy ground. Often abundant on railway embankments and along highways. Common throughout Essex county. Includes *E. purshii* Schrad. Kelley island

Eragrostis megastachya (Koeler) Link (STRONG-SCENTED ERAGROSTIS)
A weed at Point Pelee in gardens and cultivated fields. Islands

Eragrostis pectinacea (Michx.) Steud (PURPLE ERAGROSTIS)
Cedar point, Ohio shore

Dactylis glomerata L. (ORCHARD GRASS)
Occasional at Point Pelee along roads and about dwellings. Pelee island and Ohio shore

Poa annua L. (LOW SPUR GRASS)
About dwellings, especially in lawns, at Point Pelee and on Pelee island. Probably common throughout Essex county

Poa compressa L. (CANADA BLUE GRASS)
Common at Point Pelee in dry sandy ground. Islands and Ohio shore

Poa pratensis L. (JUNE GRASS)
Common at Point Pelee and on Pelee island. The common grass of open dryish woods, fields, pastures, and lawns. Abundant on the other islands and Ohio shore

Poa debilis Torr. (WEAK SPUR GRASS)
Ohio shore

Glyceria nervata (Willd.) Trin. (FOWL MEADOW GRASS)
Common at Point Pelee in damp open places and ^{rich} open woods. Islands and Ohio shore

Glyceria pallida (Torr.) Trin. (PALE MANNA GRASS)
Ohio shore

Glyceria septentrionalis Hitchc (NORTHERN MANNA GRASS)

Frequent at Point Pelee in ditches, shallow water, and about ponds, especially on the east side of the big marsh Islands Formerly included with *G fluitans* (L) R Br

Festuca octoflora Walt (SLENDER FESCUE GRASS.)

Occasional at Point Pelee on dry sandy ground Ohio shore

Festuca ovina L (SHEEP'S FESCUE)

Frequent at Point Pelee in dry sandy ground

Festuca elatior L (MEADOW FESCUE)

Occasional at Point Pelee in meadow-like ground Islands and Ohio shore

Festuca nutans Spreng (NODDING FESCUE)

Occasional at Point Pelee about farm buildings Islands of Lake Erie, except Kelley island

Bromus secalinus L (COMMON CHESS)

Occasional at Point Pelee about dwellings and in cultivated grounds Islands and Ohio shore

Bromus commutatus Schrad (VARIABLE BROME GRASS.)

Noticed only in open ground on the west side of Pelee island

Bromus racemosus L (UPRIGHT CHESS)

Roadsides and railway banks at Essex Centre (Burgess) Common on the islands

Bromus ciliatus L (FRINGED BROME GRASS)

Occasional at Point Pelee in rich open woods and thickets. Kelley and Rattlesnake islands and Ohio shore.

Lolium perenne L (COMMON DARNEL)

Kelley and Put-in-Bay islands

Agropyron repens (L) Beauv. (COUCH GRASS)

Occasional at Point Pelee about farm buildings and in old fields Probably frequent throughout Essex county. Kelley island and Ohio shore.

Agropyron dasystachyum (Hook) Scribn (NORTHERN WHEAT GRASS.)

In sandy ground near shore on Pelee island, but nowhere abundant

Hordeum jubatum L (SQUIRREL-TAIL GRASS)

Occasional at Point Pelee about dwellings Kelley island and Ohio shore. Becoming common in many parts of western Ontario

Elymus virginicus L (VIRGINIA WILD RYE)

Occasional at Point Pelee on borders of damp woods Islands and Ohio shore

Elymus canadensis L (NODDING WILD RYE.)

Frequent at Point Pelee and Pelee island on the upper beach, but nowhere abundant The other islands and Ohio shore

Elymus canadensis L, var **glaucifolius** (Muhl) Gray
(GLAUCUS-LEAVED WILD RYE)

Islands and Ohio shore

Elymus striatus Willd (SLENDER WILD RYE)

Occasional in dryish woods on Pelee island Kelley island and Ohio shore

Hystrix patula Moench. (BOTTLE-BRUSH GRASS)

In rich open woods at Point Pelee Islands and Ohio shore

CYPERACEAE (SEDGE FAMILY)

Cyperus diandrus Torr (LOW CYPERUS)

Frequent at Point Pelee in damp open ground, especially about the big marsh Islands and Ohio shore

Cyperus rivularis Kunth (SHINING CYPERUS)

Ohio shore

Cyperus Schweinitzii Torr (SCHWEINITZ'S CYPERUS)

Frequent at Point Pelee in dry open sandy ground
Common on Ohio shore

Cyperus esculentus L (YELLOW NUT GRASS)

On low ground at Point Pelee (Burgess)

Cyperus ferax Rich (MICHAX'S CYPERUS)

In damp sand near Lake Erie shore west of Kingsville Ohio shore

Cyperus strigosus L (STRAW-COLOURED CYPERUS)

Frequent at Point Pelee in damp, grassy, meadow-like ground. Islands and Ohio shore.

Cyperus Houghtonii Torr (HOUGHTON'S CYPERUS)

Frequent along the sandy shore of Lake St Clair.

Cyperus filiculmis Vahl (SLENDER CYPERUS)

Occasional at Point Pelee in very dry open ground
Ohio shore

Dulichium arundinaceum (L) Britton (DULICHUM)

Occasional at Point Pelee in wet open places about the
big marsh Ohio shore

Eleocharis obtusa (Willd) Schultes (BLUNT SPIKE RUSH)

Occasional at Point Pelee in ditches and low muddy
places and on Pelee island, Kelley, and North Bass
islands, and Ohio shore

Eleocharis palustris (L) R and S. (CREEPING SPIKE RUSH)

Common at Point Pelee and on Pelee island

Probably throughout Essex county Ohio shore

Eleocharis palustris (L) R and S, var **glaucescens** (Willd)

Gray (SLENDER CREEPING SPIKE RUSH)

On Pelee island, Put-in-Bay island, and Ohio shore

Eleocharis palustris (L) R and S, var **vigens** Bailey. (LARGE CREEPING SPIKE RUSH)

In water along Ohio shore

Eleocharis acicularis (L) R and S (NEEDLE SPIKE RUSH)

Common at Point Pelee about the ponds and small lakes
of the big marsh and on Pelee island, Bass island, and
Ohio shore

Eleocharis tenuis (Willd) Schultes (SLENDER SPIKE RUSH)

Occasional at Point Pelee in damp grassy ground, and on
Pelee island.

Eleocharis acuminata (Muhl) Nees (FLAT-STEMMED SPIKE RUSH)

Common on Ohio shore

Eleocharis intermedia (Muhl) Schultes (MATTED SPIKE RUSH)

Bass island and Ohio shore

Stenophyllus capillaris (L) Britton (HAIR-LIKE STENO-PHYLLUS)

In wet sandy fields near Sandwich (Macoun.)

Fimbristylis autumnalis (L.) R and S (SLENDER FIMBRISTYLIS)

Wet sandy fields near Sandwich (Macoun) Ohio shore

Scirpus debilis Pursh (WEAK-STALKED CLUB RUSH)

Along Ohio shore

Scirpus americanus Pers. (THREE-SQUARE)

Very common at Point Pelee on borders of big marsh, and along shore of Lake St Clair Islands and Ohio shore

Scirpus Torreyi Olney (TORREY'S BULRUSH)

Along Ohio shore

Scirpus occidentalis (Wats) Chase (WESTERN BULRUSH)

Common at Point Pelee about and in the big marsh, and along Lake St Clair shore Islands and Ohio shore

Scirpus fluviatilis (Torr) Gray (RIVER BUIRUSH)

Frequent at Point Pelee in the very wet places of the big marsh Put-in-Bay island and Ohio shore

Scirpus sylvaticus L (WOOD BULRUSH)

Put-in-Bay island

Scirpus atrovirens Muhl (DARK GREEN BULRUSH)

Common at Point Pelee in damp open ground and throughout Essex county Islands and Ohio shore

Scirpus polyphyllus Vahl (LEAFY BULRUSH)

Middle Bass island

Scirpus lineatus Michx (REDDISH BULRUSH)

In damp open meadow-like ground on the east side of Point Pelee Apparently infrequent Kelley and North Bass islands and Ohio shore

Scirpus cyperinus (L.) Kunth, var **pelius** Fernald (WOOD GRASS)

Occasional in marshy places near Lake St Clair Along Ohio shore

Hemicarpha micrantha (Vahl) Britton (HEMICARPHA)

In damp sandy ground near Amherstburg (Macoun)

Cladium mariscoides (Muhl) Torr (TWIG RUSH)

Frequent and in spots abundant at Point Pelee in wet marshy places and about the ponds and small lakes of the big marsh

- Scleria triglomerata** Michx. (TALL NUT RUSH)
In damp open ground near Sandwich. (Macoun.)
- Carex muskingumensis** Schwein. (MUSKINGUM SEDGE)
Along Ohio shore,
- Carex scoparia** Schkuhr (POINTED BROOM SEDGE)
Frequent at Point Pelee in wet open places, and on Pelee island
- Carex tribuloides** Wahlenb (BLUNT BROOM SEDGE)
Occasional at Point Pelee in damp open places North Bass island and Ohio shore
- Carex tribuloides** Wahlenb, var **turbata** Bailey (BLUNT BROOM SEDGE)
North Bass island
- Carex cristata** Schwein (CRESTED SEDGE)
In wet open ground and damp open woods at Point Pelee North Bass island and Ohio shore
- Carex festucacea** Schkuhr, var **brevior** (Dewey) Fernald (FESCUE SEDGE)
Johnson, Kelley, and Green islands and Ohio shore
- Carex Bebbii** Olney (BEBB'S SEDGE)
In low damp open ground at Point Pelee Apparently infrequent
- Carex sterilis** Willd (LITTLE PRICKLY SEDGE)
Ohio shore
- Carex rosea** Schkuhr (STELLATE SEDGE)
Frequent at Point Pelee in dry open woods Middle Bass island and Ohio shore
- Carex rosea** Schkuhr, var **radiata** Dewey (STELLATE SEDGE)
In woods near Amherstburg (Macoun)
- Carex Muhlenbergii** Schkuhr (MUHLENBERG'S SEDGE)
Occasional at Point Pelee on open sandy ground Ohio shore
- Carex Muhlenbergii** Schkuhr, var **enervis** Boott (MUHLENBERG'S SEDGE)
Ohio shore
- Carex cephalophora** Muhl (OVAL-HEADED SEDGE)
Occasional at Point Pelee in damp shaded ground. Bass island and Ohio shore

- Carex cephaloidea** Dewey (THIN-LEAVED SEDGE.)
Ohio shore
- Carex sparganioides** Muhl (BUR REED SEDGE)
In shaded ground on Pelee island. Kelley and Rattlesnake islands and Ohio shore
- Carex vulpinoidea** Michx (FOX SEDGE)
Common at Point Pelee and throughout Essex county in damp meadow-like ground Islands and Ohio shore
- Carex stipata** Muhl (AWL-FRUITED SEDGE)
In very wet open places at Point Pelee, especially on borders of big marsh Islands and Ohio shore
- Carex Sartwellii** Dewey. (SARTWELL'S SEDGE)
Wet open places in the big marsh at Point Pelee
- Carex aquatilis** Wahlenb (WATER SEDGE)
Margins of ponds and small lakes in the big marsh at Point Pelee Put-in-Bay island and Ohio shore
- Carex torta** Boott (TWISTED SEDGE)
On Cedar point, Ohio shore
- Carex stricta** Lam (TUSOCK SEDGE)
About the big marsh at Point Pelee, especially near the ponds and small lakes
- Carex leptalea** Wahlenb (BRISTLE-STALKED SEDGE)
Common at Point Pelee in very wet open places Ohio shore
- Carex virescens** Muhl , var **Swanii** Fernald (SWAN'S SEDGE.)
Near Essex Centre and Amherstburg (Macoun)
Near Leamington (Burgess)
- Carex Davisii** Schwein (DAVIS' SEDGE)
Kelley island and Ohio shore
- Carex albicans** Willd (WHITISH SEDGE)
Put-in-Bay island.
- Carex varia** Muhl. (EMMONS' SEDGE)
Occasional at Point Pelee in dry sandy ground among red cedars and pines Ohio shore
- Carex pennsylvanica** Lam (PENNSYLVANIA SEDGE.)
Frequent at Point Pelee on dry open ground Put-in-Bay island and Ohio shore

Carex eburnea Boott (BRISTLE-LEAVED SEDGE.)

On dry sandy ground at Point Pelee among red cedars
and pines

Carex laxiflora Lam (LOOSE-FLOWERED SEDGE)

Near Amherstburg (Macoun) Kelley island

Carex laxiflora Lam, var. **varians** Bailey (LOOSE-FLOWERED SEDGE)

Occasional at Point Pelee in shaded ground Hen and
Kelley islands, and Ohio shore

Carex laxiflora Lam, var. **blanda** (Dewey) Boott (LOOSE-FLOWERED SEDGE)

Frequent at Point Pelee in rich woods Kelley island
and Ohio shore.

Carex laxiflora Lam, var. **latifolia** Boott (WHITE BEAR SEDGE)

Kelley island

Carex granularis Muhl (MEADOW SEDGE)

Kelley island and Ohio shore

Carex Crawei Dewey (CRAWE'S SEDGE)

Ohio shore.

Carex flava L (YELLOW SEDGE)

Occasional at Point Pelee in wet open ground

Carex Oederi Retz, var. **pumila** (Cosson and Germain)
Fernald (GREEN SEDGE)

In damp sand about the ponds and small lakes of the
big marsh at Point Pelee, and along the north shore
of Lake Erie

Carex filiformis L (SLENDER SEDGE)

Common at Point Pelee in and about the big marsh,
and on Pelee island

Carex lanuginosa Michx (WOOLLY SEDGE)

In damp meadow-like ground at Point Pelee. Put-in-
Bay island

Carex riparia W Curtis (RIVER-BANK SEDGE)

On marshes at Point Pelee Ohio shore.

Carex squarrosa L (SQUARROSE SEDGE)

Ohio shore

Carex Frankii Kunth. (FRANK'S SEDGE)

Middle Bass island and Ohio shore

Carex comosa Boott (BRISTLY SEDGE)Common at Point Pelee in wet spots on the big marsh
Islands**Carex hystericina** Muhl (PORCUPINE SEDGE)Common at Point Pelee in very wet places, especially
on the big marsh Put-in-Bay and Middle Bass
islands and Ohio shore**Carex lurida** Wahlenb (SALLOW SEDGE)

Ohio shore

Carex lupulina Muhl (HOP SEDGE)Common at Point Pelee in wet marshy spots Islands
and Ohio shore**Carex intumescens** Rudge (BLADDER SEDGE)

Near Amherstburg (Macoun)

ARACEAE (ARUM FAMILY)

Arisaema triphyllum (L) Schott (JACK-IN-THE-PULPIT)Common at Point Pelee in rich woods Islands and Ohio
shore**Arisaema Dracontium** (L) Schott (GREEN DRAGON)Frequent on Grosse Isle, Wayne county, Mich , and
should be found in Essex county Ohio shore**Symplocarpus foetidus** (L) Nutt (SKUNK CABBAGE)

Common about Windsor

Acorus Calamus L (SWEET FLAG)Common at Point Pelee on border of the big marsh,
especially along "the narrows," and west of Colchester.
Put-in-Bay and Ohio shore

LEMNACEAE (DUCKWEED FAMILY)

Spirodela polyrhiza (L) Schleid. (GREATER DUCKWEED.)Common at Point Pelee on water of ditches and pools
in the big marsh Ohio shore

Lemna trisulca L (IVY-LEAVED DUCKWEED)

On and in water about Put-in-Bay island, and Ohio shore.

Lemna minor L (LESSER DUCKWEED)

Often covering stagnant water in the big marsh at Point Pelee, also about the islands and Ohio shore.

Wolffia columbiana Karst (COLUMBIA WOLFFIA)

About the Ohio shore

Wolffia punctata Griseb (BRAZIL WOLFFIA)

Ohio shore

COMMELINACEAE (SPIDERWORT FAMILY)

Tradescantia reflexa Raf (REFLEXED SPIDERWORT)

Ohio shore

Tradescantia virginiana L (SPIDERWORT)

Frequent on Ohio shore

PONTEDERIACEAE (PICKEREL WEED FAMILY)

Pontederia cordata L (PICKEREL WEED)

Frequent at Point Pelee in shallow water of the ponds and small lakes of the big marsh Islands and Ohio shore

Heteranthera dubia (Jacq) MacM (WATER STAR GRASS)

In still water about the islands and Ohio shore

JUNCACEAE (RUSH FAMILY)

Juncus bufonius L (TOAD RUSH)

Common at Point Pelee in damp open ground and on Point Pelee island

Juncus tenuis Willd (SLENDER RUSH)

Common at Point Pelee about and near dwellings, along roads and paths. Islands and Ohio shore.

Juncus balticus Willd., var **littoralis** Engelm. (BALTIC RUSH)

Occasional at Point Pelee in open damp or dry ground.
Not noticed here on the beach as a sand binder Ohio shore

Juncus effusus L. (COMMON RUSH.)

Occasional at Point Pelee on open damp ground. North Bass island and Ohio shore.

Juncus brachycephalus (Engelm.) Buchenau. (SMALL-HEADED RUSH)

Ohio shore

Juncus canadensis J. Gay. (CANADA RUSH)

Occasional at Point Pelee in marshy ground. Ohio shore

Juncus nodosus L. (KNOTTED RUSH)

Frequent at Point Pelee on borders of big marsh and in damp sand about the ponds and small lakes. In ditches near Leamington. (Burgess) Ohio shore.

Juncus acuminatus Michx. (SHARP-FRUITED RUSH.)

Near Essex Centre and at Point Pelee (Macoun.)

Juncus Torreyi Coville (TORREY'S RUSH.)

Frequent at Point Pelee in low damp ground. Ohio shore

Juncus alpinus Vill., var **insignis** Fries (RICHARDSON'S RUSH)

Occasional at Point Pelee on the sandy beach. Kelley island and Ohio shore.

Luzula saltuensis Fernald (HAIRY WOOD RUSH.)

Frequent at Point Pelee in open woods and thickets.

Luzula campestris (L.) DC., var. **multiflora** (Ehrh.) Celak. (COMMON WOOD RUSH)

Occasional at Point Pelee in open dry ground.

LILIACEAE (LILY FAMILY)

Zygadenus chloranthus Richards (GLAUCOUS ZYGADENUS.)
Ohio shore.

- Uvularia grandiflora** Sm. (LARGE-FLOWERED BELLWORT.)
Frequent at Point Pelee in damp rich woods Islands and Ohio shore
- Oakesia sessilifolia** (L) Wats (SESSILE-LEAVED BELLWORT)
Common about Windsor
- Allium tricoccum** Ait (WILD LEEK)
Point Pelee island Occasional in other parts of Essex county, and formerly abundant
- Allium cernuum** Roth. (WILD ONION)
Pelee island, Newton Tripp, 1913 Islands and Ohio shore
- Allium canadense** L (WILD GARLIC)
Abundant at Point Pelee in spots Near Colchester (Macoun) Kelley island and Ohio shore
- Hemerocallis fulva** L (COMMON DAY LILY)
A common escape from cultivation and well established near dwellings at Point Pelee North Bass island and Ohio shore
- Lilium philadelphicum** L (WILD ORANGE-RED LILY)
Ohio shore
- Lilium philadelphicum** L, var **andinum** (Nutt) Ker
(WESTERN RED LILY)
In open sandy places along shore of Lake St Clair
- Lilium canadense** L (WILD YELLOW LILY)
Frequent at Point Pelee and on Pelee island Kelley island
- Erythronium americanum** Ker. (YELLOW ADDER'S TONGUE)
Common in woods about Windsor Islands and Ohio shore
- Erythronium albidum** Nutt (WHITE ADDER'S TONGUE)
In rich woods about Windsor Johnson, Kelley, and Rattlesnake islands and Ohio shore
- Camassia esculenta** (Ker) Robinson (WILD HYACINTH)
White island in Detroit river (Macoun) On eight islands, and Ohio shore
- Ornithogalum umbellatum** L (STAR OF BETHLEHEM)
Put-in-Bay island

Asparagus officinalis L (GARDEN ASPARAGUS)

Well established at Point Pelee in open light sandy ground Islands and Ohio shore

Smilacina racemosa (L.) Desf (FALSE SPIKENARD.)

Common at Point Pelee in rich open woods or in open or slightly shaded ground Common on the islands and Ohio shore.

Smilacina stellata (L.) Desf (STAR-FLOWERED SOLOMON'S SEAL)

Common at Point Pelee in rich open woods or in sandy open ground on the upper beach Common on the islands and Ohio shore

Smilacina trifolia (L.) Desf (THREE-LEAVED SOLOMON'S SEAL)

Frequent near Windsor in very wet places (F P Cravin)

Maianthemum canadense Desf (FALSE LILY-OF-THE-VALLEY)

Common at Point Pelee in dry woods Ohio shore

Streptopus roseus Michx (SESSILE-LEAVED TWISTED STALK)

In thick damp woods about Windsor (F P Cravin)

Polygonatum biflorum (Walt) Ell (SMALL SOLOMON'S SEAL)

Common at Point Pelee in rich open woods and thickets Ohio shore

Polygonatum commutatum (R and S) Dietr (GREAT SOLOMON'S SEAL)

Common on north shore of Lake Erie and along Detroit river Common on the islands and Ohio shore

Trillium erectum L (ILL-SCENTED WAKE ROBIN)

Frequent about Windsor (F P Cravin) Common on the islands and Ohio shore

Trillium grandiflorum (Michx) Salisb (LARGE-FLOWERED WAKE ROBIN)

Frequent at Point Pelee in rich open woods and thickets Common on the islands and Ohio shore

Aletris farinosa L (COLIC-ROOT)

In sandy thickets near Leamington (Burgess) Common near Sandwich (Macoun)

Smilax herbacea L (CARRION-FLOWER)

Frequent at Point Pelee in open woods and on Pelee island and throughout Essex county. Ohio shore

Smilax ecirrhata (Engelm) Wats (UPRIGHT SMILAX)

Frequent at Point Pelee in rich woods and thickets. Kelley island and Ohio shore

Smilax rotundifolia L (COMMON GREEN BRIER)

Put-in-Bay island and Ohio shore

Smilax rotundifolia L, var **quadrangularis** (Muhl) Wood.
(SQUARE-STEMMED GREEN BRIER)

In damp woods at Point Pelee (Macoun) Low woods near Leamington (Burgess)

Smilax hispida Muhl (HISPID GREEN BRIER)

Common at Point Pelee in moist thickets. Islands and Ohio shore

DIOSCOREACEAE (YAM FAMILY)

Dioscorea villosa L (WILD YAM-ROOT)

Plentiful at Point Pelee in woods and thickets and on Pelee island Ohio shore (*D paniculata* Michx according to Bulletin 89, United States Department of Agriculture, Bureau of Plant Industry)

AMARYLLIDACEAE (AMARYLLIS FAMILY)

Hypoxis hirsuta (L) Coville

Common in meadow-like ground about Windsor (F P Cravin) Ohio shore

IRIDACEAE (IRIS FAMILY.)

Iris versicolor L (LARGE BLUE FLAG)

Borders of big marsh at Point Pelee and other damp open places Islands and Ohio shore

Sisyrinchium angustifolium Mill (NORTHERN BLUE-EYED GRASS)

Frequent about Windsor. Ohio shore.

Sisyrinchium gramineum Curtis (COMMON BLUE-EYED GRASS)

Occasional about Windsor. Ohio shore

ORCHIDACEAE (ORCHIS FAMILY)

Cypripedium parviflorum Salisb, var. **pubescens** (Willd.)

Knight (LARGER YELLOW LADY'S SLIPPER)

Ohio shore

Habenaria flava (L.) Gray (TUBERCLED ORCHIS)

On Cedar point, Ohio shore

Habenaria ciliaris (L.) R. Br. (YELLOW FRINGED ORCHIS)

In sandy ground near Leamington (Burgess) Near Windsor (F P Cravin)

Habenaria psycodes (L.) Sw (SMALLER PURPLE-FRINGED ORCHIS)

Cedar point, Ohio shore.

Pogonia ophioglossoides (L.) Ker (ROSE POGONIA)

Frequent in damp meadow-like ground about Windsor. (F P Cravin)

Spiranthes cernua (L.) Richard (NODDING LADIES' TRESSES)

Common along north shore of Lake Erie

Epipactis pubescens (Willd.) A. A. Eaton (DOWNY RATTLE-SNAKE PLANTAIN)

In rich woods near Windsor (F P Cravin)

Corallorrhiza maculata Raf (LARGE CORAL ROOT)

Ohio shore

Liparis Loeselii (L.) Richard (FEN ORCHIS)

Cedar point, Ohio shore

Aplectrum hyemale (Muhl.) Torr. (PUTTY-ROOT)

Ohio shore.

PIPERACEAE (PEPPER FAMILY)

Saururus cernuus L (LIZARD'S TAIL)

In wet places near Detroit river below Amherstburg (MacLagan)

SALICACEAE (WILLOW FAMILY)

Salix nigra Marsh (BLACK WILLOW)

Frequent at Point Pelee in damp places on borders of woods and occasional on the beach Usually mere shrubs Islands and Ohio shore

Salix amygdaloides Anders (PEACH-LEAVED WILLOW.)

Frequent at Point Pelee in damp open ground, and occasional along "the narrows" Abundant on Pelee island

Salix pentandra L (BAY-LEAVED WILLOW)

Occasionally planted, but not noticed as escaping

Salix lucida Muhl (SHINING WILLOW)

Occasional at north end of Point Pelee Hen and Put-in-Bay islands and Ohio shore

Salix alba L (WHITE WILLOW)

Often planted and apparently spreading at Point Pelee and on Pelee island

Salix alba L, var **vitellina** (L) Koch (WHITE WILLOW)

Islands and Ohio shore

Salix babylonica L (WEeping WILLOW)

Planted in abundance and thriving along roads near Lake St Clair Not noticed as spreading

Salix longifolia Muhl (SAND BAR WILLOW)

Occasional at Point Pelee in damp open ground near the big marsh and in damp sand on and near the beach Common on the islands and Ohio shore

Salix cordata Muhl (HEART-LEAVED WILLOW)

Frequent on Pelee island and the other islands and Ohio shore

Salix glaucophylla Bebb (BROAD-LEAVED WILLOW)

On Cedar point, Ohio shore

Salix balsamifera Barratt (BALSAM WILLOW)

Reported from Kent county, and should be found in Essex county

Salix pedicellaris Pursh (BAG WILLOW)

In very wet places about Windsor

Salix discolor Muhl (GLAUCOUS WILLOW)

Occasional on Pelee island Hen island and Ohio shore.

Salix discolor Muhl, var. **eriocephala** (Michx) Anders
(GLAUCOUS WILLOW)

Ohio shore

Salix petiolaris Sm

Damp ground about Windsor.

Salix humilis Marsh (PRAIRIE WILLOW)

In dry open ground about Windsor

Salix sericea Marsh (SILKY WILLOW)

Swampy places near Windsor

Salix rostrata Richards (BEBB'S WILLOW)

Frequent on Pelee island Other islands and Ohio shore

Salix candida Flugge (SAGE WILLOW)

Open marshy ground near Windsor

Salix purpurea L (PURPLE WILLOW)

In damp open ground at Point Pelee near Grubb's fishery
buildings Kelley and Put-in-Bay islands and Ohio
shore

Populus alba L (WHITE POPLAR)

Occasional at Point Pelee as a cultivated tree and spread-
ing by root Kelley and Put-in-Bay islands

Populus tremuloides Michx (AMERICAN ASPEN)

Frequent at Point Pelee but nowhere abundant Islands

Populus grandidentata Michx (LARGE-TOOTHED ASPEN)

Occasional at Point Pelee and on Pelee island Put-in-
Bay island and Ohio shore

Populus balsamifera L (BALSAM POPLAR)

Small trees noticed at Point Pelee in dry open ground
and along the west upper beach Ohio shore

Populus deltoides Marsh (COTTON-WOOD)

Many large trees along "the narrows" and in rich ground
with other trees at Point Pelee Common on the
islands and Ohio shore

Populus nigra L, var **italica** Du Roi (LOMBARDY POPLAR)

Occasionally planted at Point Pelee and spreading by
root

JUGLANDACEAE (WALNUT FAMILY)

Juglans cinera L. (BUTTERNUT)

Occasional at Point Pelee in dry ground with other trees.

Frequent along the north shore of Lake Erie Ohio shore.

Juglans nigra L. (BLACK WALNUT)

Abundant at Point Pelee growing in pure sand, especially along "the narrows" Very common along the north shore of Lake Erie and on Pelee island Formerly on Kelley and Middle Bass islands Ohio shore.

Carya ovata (Mill) K Koch (*C Alba* Nutt) (SHAG-BARK HICKORY)

Occasional at Point Pelee and near Lake St Clair Abundant on the islands and Ohio shore

Carya laciniosa (Michx f) Loud (*C sulcata* Nutt) (BIG SHELL-BARK)

Near Colchester and probably throughout Essex county. Ohio shore

Carya alba (L) K Koch (*C tomentosa* Nutt) (MOCKER NUT)

Very common at Point Pelee and on Pelee island Put-in-Bay island

Carya microcarpa Nutt (SMALL-FRUITED HICKORY)

Plentiful along north shore of Lake Erie, and probably throughout Essex county Pelee island

Carya glabra (Mill) Spach (PIG-NUT HICKORY)

Near Amherstburg Islands and Ohio shore

Carya cordiformis (Wang) K Koch (*C amara* Nutt) (BITTERNUT)

Frequent at Point Pelee and on Pelee island Ohio shore

BETULACEAE (BIRCH FAMILY)

Corylus americana Walt (COMMON HAZELNUT)

Occasional at Point Pelee on borders of woods and on Pelee island Not noticed on the other islands Ohio shore.

Ostrya virginiana (Mill) K Koch. (IRONWOOD)

Common at Point Pelee in rich ground with other trees.
Islands and Ohio shore

Carpinus caroliniana Walt (BLUE BEECH)

Infrequent at Point Pelee, but common along north shore
of Lake Erie Probably throughout Essex county.
Along Lake St. Clair Formerly on Kelley island

Betula lutea Michx f (YELLOW BIRCH)

Near Kingsville and farther west along north shore of
Lake Erie

Alnus incana (L) Moench (SPECKLED ALDER)

In damp places near Lake St Clair Apparently in-
frequent

FAGACEAE (BEECH FAMILY.)

Fagus grandifolia Ehrh (BEECH)

Not noticed at Point Pelee, but common along the north
shore of Lake Erie to Detroit river Formerly on
Put-in-Bay and Middle Bass islands

Castanea dentata (Marsh) Borkh (CHESTNUT)

Frequent along the north shore of Lake Erie to Detroit
river Fine specimens still existing in woods about
Windsor

Quercus alba L (WHITE OAK)

Not noticed at Point Pelee, but common on Pelee island.
No doubt throughout Essex county On the other
islands and Ohio shore

Quercus macrocarpa Michx (BUR OAK)

Frequent at Point Pelee in rich ground with other trees
Islands and Ohio shore

Quercus bicolor Willd (SWAMP WHITE OAK)

Occasional at Point Pelee in rich ground with other trees
and on Pelee island, Lake Erie shore, Kelley island,
and Ohio shore

Quercus Muhlenbergii Engelm (CHESTNUT OAK)

Frequent at Point Pelee with other trees, and along Lake
Erie shore. Islands and Ohio shore.

Quercus prinoides Willd (SCRUB CHESTNUT OAK.)

Noticed by Thomas Burgess at Point Pelee

Quercus rubra L (RED OAK)

Very common at Point Pelee with other trees in both dry and damp rich ground Common on islands and Ohio shore

Quercus palustris Muench (PIN OAK)

Near Leamington (Burgess) Ohio shore. Fine trees about Windsor

Quercus coccinea Muench (SCARLET OAK)

Frequent in dry ground about Windsor (F P Cravin) Ohio shore

Quercus velutina Lam (YELLOW OAK)

Frequent at Point Pelee in dry ground with other trees Kelley and Put-in-Bay islands and Ohio shore

Quercus imbricaria Michx (LAUREL OAK)

Abundant on Cedar point, Ohio shore

URTICACEAE (NETTLE FAMILY)

Ulmus fulva Michx (SLIPPERY ELM)

Occasional at Point Pelee in rich ground with other trees Very abundant on Pelee island The other islands and Ohio shore

Ulmus americana L (AMERICAN ELM)

Abundant at Point Pelee in rich ground with other trees. Common on the islands and Ohio shore

Ulmus racemosa Thomas (ROCK ELM)

Frequent about Windsor (F P Cravin)

Celtis occidentalis L (SUGARBERRY)

Abundant in sandy ground at Point Pelee, especially along "the narrows" Lake Erie shore and along Detroit river Common on the islands and Ohio shore

Cannabis sativa L (HEMP)

Very abundant at Point Pelee in spots in dry shaded ground growing like a native plant Point Pelee island

Humulus Lupulus L. (COMMON HOP)

Noticed as an escape at Point Pelee and on Point Pelee island

Maclura pomifera (Raf) Schneider (OSAGE ORANGE)

Often planted for hedges in Essex county, but perhaps not spreading as an escape

Morus rubra L. (RED MULBERRY)

Said to be plentiful formerly at Point Pelee, but a few small trees only were noticed in 1911 Abundant, and trees often large on Pelee island Frequent along the north shore of Lake Erie On the other islands and Ohio shore

Urtica gracilis Ait (SLENDER NETTLE)

Common at Point Pelee on borders of the big marsh along "the narrows" and other damp open or shaded places Common on the islands and Ohio shore

Laportea canadensis (L) Gaud (WOOD NETTLE)

Common at Point Pelee in rich woods Also common on the islands and Ohio shore

Pilea pumila (L) Gray (RICHWEED)

Abundant in spots at Point Pelee in damp shaded ground Kelley island and Ohio shore

Boehmeria cylindrica (L) Sw (WILD FALSE NETTLE)

Frequent at Point Pelee in damp open or slightly shaded places Common on the islands and Ohio shore

Parietaria pennsylvanica Muhl (PENNSYLVANIA PELLITORY)

Abundant at Point Pelee under red cedars and other trees Abundant on the islands and Ohio shore

SANTALACEAE (SANDALWOOD FAMILY)

Comandra umbellata (L) Nutt (BASTARD TOAD-FLAX)

Frequent at Point Pelee in open or shaded sandy ground and on Pelee island Ohio shore

ARISTOLOCHIACEAE (BIRTHWORT FAMILY.)

Asarum canadense L. (WILD GINGER)

In rich shaded ground along Detroit river. (MacLagan.)

POLYGONACEAE (BUCKWHEAT FAMILY)

Rumex Britannica L (GREAT WATER DOCK)

Frequent at Point Pelee in and about the big marsh,
and on Pelee island Cedar point, Ohio shore

Rumex crispus L (YELLOW DOCK)

Occasional at Point Pelee about dwellings and in old
fields Abundant on the islands and Ohio shore.

Rumex altissimus Wood (PALE DOCK)

Put-in-Bay island

Rumex verticillatus L (SWAMP DOCK)

Occasional at Point Pelee in very wet open places. Ohio
shore

Rumex obtusifolius L (BITTER DOCK)

About dwellings and in old cultivated fields at Point
Pelee Common on the islands and Ohio shore

Rumex Acetosella L (FIELD SORREL)

Occasional at Point Pelee near dwellings and in old
fields Put-in-Bay and Kelley islands and Ohio
shore

Polygonum aviculare L (KNOT GRASS)

Common at Point Pelee about dwellings and in waste
places Abundant on the islands and Ohio shore

Polygonum aviculare L, var **littorale** (Link) Koch. (SHORE
KNOTWEED)

Kelley island

Polygonum erectum L (ERECT KNOTWEED)

Occasional about dwellings at Point Pelee Common
on the islands and Ohio shore

Polygonum tenue Michx (SLENDER KNOTWEED)

Ohio shore

Polygonum lapathifolium L (DOCK-LEAVED PERSICARIA)

Common at Point Pelee on the banks of big ditches and in other wet places of the big marsh, and on Pelee island Ohio shore

Polygonum tomentosum Schrank (SLENDER PINK PERSICARIA)

Frequent at Point Pelee along borders of the big marsh, and occasional as a weed near dwellings Ohio shore

Polygonum amphibium L (WATER PERSICARIA)

Frequent at Point Pelee along ditches and in wet places on and about the big marsh, and on Pelee island Ohio shore

Polygonum Muhlenbergii (Meisn) Wats (SWAMP PERSICARIA)

Common at Point Pelee in very wet places on the big marsh Islands and Ohio shore

Polygonum pennsylvanicum L (PENNSYLVANIA PERSICARIA)

Frequent at Point Pelee in damp meadow-like ground Along Detroit river (MacLagan) Kelley and Middle Bass islands and Ohio shore

Polygonum Hydropiper L (COMMON SMARTWEED)

Frequent at Point Pelee in damp open or slightly shaded ground Common on the islands and Ohio shore

Polygonum acre HBK (WATER SMARTWEED)

Abundant at Point Pelee bordering the big marsh along "the narrows" and in other damp places Islands and Ohio shore

Polygonum orientale L (PRINCE'S FEATHER)

Noticed at Point Pelee as an escape near dwellings, and apparently persisting

Polygonum Persicaria L (LADY'S THUMB)

Occasional at Point Pelee about dwellings and often abundant on banks of ditches Abundant on the islands and Ohio shore

Polygonum hydropiperoides Michx (WILD WATER PEPPER)

Occasional at Point Pelee in wet shaded places Kelley island

Polygonum virginianum L (VIRGINIA KNOTWEED.)

In rich woods at Point Pelee Ohio shore.

Polygonum sagittatum L. (ARROW-LEAVED TEAR-THUMB.)

Occasional at Point Pelee in low open or shaded ground and in damp places along north shore of Lake Erie. Ohio shore

Polygonum Convolvulus L (BLACK BINWEED)

Frequent at Point Pelee as a weed in gardens and cultivated fields Common on the islands and Ohio shore.

Polygonum scandens L. (CLIMBING FALSE BUCKWHEAT.)

Frequent at Point Pelee in rich shaded ground and on Pelee island The other islands and Ohio shore.

Polygonum dumetorum L (COPSE BUCKWHEAT.)

Ohio shore

Fagopyrum esculentum Moench (BUCKWHEAT)

Occasional at Point Pelee as an escape Ohio shore.

CHENOPODIACEAE (GOOSEFOOT FAMILY)

Cycloloma atriplicifolium (Spreng) Coult (WINGED FIG-WEED.)

In sandy ground near Windsor Cedar point, Ohio shore

Chenopodium ambrosioides L (MEXICAN TEA.)

In and about cultivated grounds along Detroit river

Chenopodium Botrys L (JERUSALEM OAK)

Occasional at Point Pelee in dry sandy ground Kelley island and Ohio shore

Chenopodium capitatum (L) Asch (STRAWBERRY BLITE)

Middle Bass and Green islands

Chenopodium hybridum L (MAPLE-LEAVED GOOSEFOOT)

Noticed at Point Pelee as a weed in gardens and cultivated fields Islands and Ohio shore

Chenopodium album L. (LAMB'S QUARTERS)

Common at Point Pelee as a weed in gardens, cultivated fields, and waste places. Common on the islands and Ohio shore

Chenopodium album L., var **viride** (L.) Moq. (PIGWEEED.)

Common on the islands and Ohio shore

Chenopodium urbicum L (UPRIGHT GOOSEFOOT.)

Kelley island

Chenopodium Boscianum Moq (BASC'S GOOSEFOOT)

In sandy thickets near Point Pelee (Macoun.) Kelley island

Chenopodium leptophyllum Nutt (NARROW-LEAVED GOOSEFOOT)

Sandy woodlands at Point Pelee (Burgess)

Atriplex patula L , var **hastata** (L) Gray. (HALBERD-LEAVED ORACHE)

Occasional at Point Pelee as a weed about dwellings and on Pelee island Ohio shore

Salsola Kali L , var **tenuifolia** G F.W. Mey. (RUSSIAN THISTLE)

Occasional at Point Pelee as a weed about dwellings.

AMARANTHACEAE (AMARANTH FAMILY)

Amaranthus retroflexus L (AMARANTH PIGWEED)

A common weed at Point Pelee in gardens and cultivated fields Common on the islands and Ohio shore.

Amaranthus hybridus L. (GREEN AMARANTH)

Noticed near Leamington by Dearness Common on the islands.

Amaranthus paniculatus L. (PURPLE AMARANTH)

Islands.

Amaranthus graecizens L. (TUMBLE WEED.)

Occasional at Point Pelee as a weed in sandy cultivated fields Islands and Ohio shore.

Amaranthus blitoides Wats. (PROSTRATE AMARANTH)

Occasional at Point Pelee as a weed about dwellings and in gardens Islands and Ohio shore

Acnida tuberculata Moq (WESTERN WATER HEMP)

On Kelley and Middle Bass islands and Ohio shore

PHYTOLACCACEAE (POKEWEED FAMILY)

Phytolacca decandra L (COMMON POKE)

Common at Point Pelee in shaded sandy ground Along
 Detroit river (MacLagan) Islands and Ohio shore.

NYCTAGINACEAE (FOUR-O'CLOCK FAMILY)

Oxybaphus nyctagineus (Michx) Sweet (HEART-LEAVED
 UMBRELLA-WORT)

Along railways near Windsor Cedar point, Ohio
 shore

ILLECEBRACEAE (KNOTWORT FAMILY)

Anychia polygonoides Raf (SLENDER FORKED CHICKWEED)
 Put-in-Bay island**Anychia canadensis** (L) BSP (FORKED CHICKWEED)
 Near Amherstburg (Macoun) Ohio shore

AIZOACEAE (CARPET WEED FAMILY)

Mollugo verticillata L (CARPET WEED)

Occasional at Point Pelee in open sandy ground and on
 Pelee island

CARYOPHYLLACEAE (PINK FAMILY)

Arenaria lateriflora L (BLUNT-LEAVED SANDWORT)
 Ohio shore**Arenaria serpyllifolia** L (THYME-LEAVED SANDWORT)
 Frequent at Point Pelee in dry open ground near dwell-
 ings Islands and Ohio shore**Arenaria stricta** Michx (ROCK SANDWORT)
 Occasional at Point Pelee in open sandy ground, and
 often on the upper beach Islands and Ohio shore

Stellaria longifolia Muhl (LONG-LEAVED STITCHWORT.)

Frequent at Point Pelee in open damp grassy places
and open damp woods, and abundant in spots on the
big marsh Pelee island Ohio shore

Stellaria media (L.) Cyrill (COMMON CHICKWEED)

Common at Point Pelee as a garden and field weed.
Abundant on the islands and Ohio shore

Cerastium arvense L., var **oblongifolium** (Torr.) Hollick
and Britton. (FIELD MOUSE-EAR CHICKWEED)

In sandy ground at Point Pelee and on Pelee island
Near Amherstburg The other islands and Ohio shore

Cerastium vulgatum L (COMMON MOUSE-EAR CHICKWEED)

Occasional at Point Pelee as a weed about dwellings, in
gardens and cultivated fields Islands and Ohio shore

Cerastium nutans Raf (NODDING CHICKWEED)

Occasional at Point Pelee in sandy shaded ground along
"the narrows" Reported near Amherstburg Is-
lands and Ohio shore

Agrostemma Githago L (COMMON COCKLE)

Occasional at Point Pelee about dwellings and in waste
places, and on Pelee island Kelley island and Ohio
shore

Lychnis alba Mill (WHITE CAMPION)

Along roads and in old cultivated fields near Windsor

Silene antirrhina L (SLEEPY CATCHFLY)

Frequent at Point Pelee in sandy open ground and on
Pelee island Kelley island and Ohio shore

Silene dichotoma Ehrh (FORKED CATCHFLY)

Ohio shore

Silene noctiflora L (NIGHT-FLOWERING CATCHFLY)

Occasional at Point Pelee about dwellings and in old
fields

Silene virginica L (FIRE PINK)

Put-in-Bay, Kelley, Hartshorn, and Johnson islands and
Ohio shore

Silene latifolia (Mill.) Britten and Rendle (BLADDER CAM-
PION)

Kelley island

Saponaria officinalis L (BOUNCING BET)

Abundant in spots at Point Pelee in open sandy ground.

Islands and Ohio shore

Dianthus barbatus L (SWEET WILLIAM)

Frequently about Windsor (F. P Cravin)

PORTULACACEAE (PURSLANE FAMILY)

Claytonia virginica L (SPRING BEAUTY)

Common at Point Pelee in damp rich woods and thickets.

Along Detroit river. Islands and Ohio shore

Portulaca oleracea L (COMMON PURSLANE)

Common at Point Pelee as a weed in sandy gardens and field Islands and Ohio shore

CERATOPHYLLACEAE (HORNWORT FAMILY)

Ceratophyllum demersum L. (HORNWORT)

In ponds and slow streams near Detroit river. (Mac-lagan) Put-in-Bay island.

NYMPHAEACEAE (WATER LILY FAMILY.)

Nymphaea advena Ait (YELLOW WATER LILY)

About the ponds and small lakes and in very wet places of the big marsh at Point Pelee and on Pelee island

About Middle Bass island

Nymphaea advena Ait , var **variegata** (Engelm) Fernald
(VARIEGATED YELLOW WATER LILY)

In Sandusky bay, Ohio shore

Castalia tuberosa (Paine) Greene (WHITE WATER LILY)

Common on the big ditches, ponds, and small lakes of the big marsh Rare on Ohio shore

Nelumbo lutea (Willd) Pers (YELLOW NELUMBO)

Abundant in Sandusky bay, Ohio shore

Brasenia Schreberi Gmel (WATER SHIELD)

Frequent at Point Pelee in the ponds and small lakes of the big marsh. Rare on Ohio shore

RANUNCULACEAE (CROWFOOT FAMILY.)

Ranunculus circinatus Sibth (STIFF WATER CROWFOOT.)

Frequent in stagnant water on Pelee island. In wet places along north shore of Lake Erie

Ranunculus delphinifolius Torr (YELLOW WATER CROWFOOT)

Occasional at Point Pelee in ditches and wet places
Islands and Ohio shore.

Ranunculus sceleratus L (CURSED CROWFOOT)

Frequent at Point Pelee on borders of the big marsh.
Islands and Ohio shore

Ranunculus abortivus L (SMALL-FLOWERED CROWFOOT)

Common at Point Pelee in rich woods and thickets
Islands and Ohio shore

Ranunculus recurvatus Poir (HOODED CROWFOOT)

Frequent at Point Pelee in open woods and thickets,
and on Pelee island.

Ranunculus fascicularis Muhl (EARLY CROWFOOT)

Near Detroit river below Amherstburg Johnson and
Kelley islands and Ohio shore

Ranunculus septentrionalis Poir (SWAMP BUTTERCUP.)

Occasional at Point Pelee in damp open or shaded
ground. Put-in-Bay and Kelley islands and Ohio
shore.

Ranunculus hispidus Michx (HISPID BUTTERCUP)

Reported in wet ground along Detroit river.

Ranunculus repens L (CREEPING BUTTERCUP)

Frequent about Windsor (F. P. Cravin)

Ranunculus pennsylvanicus L f (BRISTLY CROWFOOT.)

In damp grassy places along north shore of Lake Erie.
Ohio shore.

Ranunculus acris L. (TALL CROWFOOT)

Noticed about Leamington and Windsor Put-in-Bay
island

Thalictrum dioicum L (EARLY MEADOW RUE)

Abundant at Point Pelee in shaded ground along "the
narrows" and in rich open woods. Islands and Ohio
shore

Thalictrum dasycarpum Fisch and Lall (PURPLISH MEADOW RUE)

Common at Point Pelee along "the narrows" and in rich open woods Ohio shore

Thalictrum polygamum Muhl (TALL MEADOW RUE)
Ohio shore

Anemonella thalictroides (L) Spach (RUE ANEMONE)

Noticed by Prof John Macoun on Pelee island. The other islands and Ohio shore

Hepatica triloba Chaix (ROUND-LOBED LIVERLEAF)

In dryish woods about Leamington Islands and Ohio shore.

Hepatica acutiloba DC (SHARP-LOBED LIVERLEAF)

In rich woods about Leamington Islands and Ohio shore.

Anemone cylindrica Gray (LONG-FRUITED ANEMONE)

Frequent at Point Pelee in dry ground Ohio shore

Anemone virginiana L (TALL ANEMONE)

On Point Pelee island and other islands

Anemone canadensis L (CANADA ANEMONE)

Occasional at Point Pelee in damp open ground Islands and Ohio shore

Anemone quinquefolia L (WOOD ANEMONE)

On margins of woods and thickets at Point Pelee Common about Windsor Islands

Clematis virginiana L (VIRGIN'S BOWER)

Frequent on Pelee island North Bass island

Caltha palustris L (MARSH MARIGOLD)

Occasional at Point Pelee in damp open or shaded places

Coptis trifolia (L) Salisb (GOLD THREAD)

Common at Windsor (F P Cravin)

Aquilegia canadensis L (WILD COLUMBINE)

Very abundant at Point Pelee along "the narrows." Islands and Ohio shore

Actaea rubra (Ait) Willd (RED BANEERRY)

Cedar point, Ohio shore

Actaea alba (L) Mill (WHITE BANEERRY)

Ohio shore

Hydrastis canadensis L (GOLDEN SEAL)

Noticed in rich woods along Detroit river.

MAGNOLIACEAE (MAGNOLIA FAMILY)

Liriodendron tulipifera L (TULIP TREE)

Known in the lumber trade as whitewood or yellow poplar.
 One tree on the farm of Wallace Tilden at Point Pelee
 Fine specimens still existing (1911) on the north shore
 of Lake Erie west to Detroit river Ohio shore

ANONACEAE (CUSTARD APPLE FAMILY)

Asimina triloba Dunal (COMMON PAPAW)

Reported by Prof John Macoun as formerly abundant at
 Point Pelee Not noticed there in 1910, but fine
 specimens seen near Colchester in 1911 Formerly
 on Kelley island

MENISPERMACEAE (MOONSEED FAMILY)

Menispermum canadensis L (MOONSEED)

Frequent at Point Pelee in rich woods and thickets
 Islands and Ohio shore

BERBERIDACEAE (BARBERRY FAMILY)

Podophyllum peltatum L (MANDRAKE)

Frequent and in spots abundant at Point Pelee in dryish
 shaded ground

Jeffersonia diphylla (L) Pers (TWINLEAF)

Frequent in woods about Windsor (F P Cravin)
 Johnson island

Caulophyllum thalictroides (L) Michx (PAPOOSE ROOT)

Frequent at Point Pelee in rich woods and on Pelee
 island Johnson island

LAURACEAE (LAUREL FAMILY)

Sassafras variifolium (Salisb) Ktze (SASSAFRAS)

Common in dry woods at Point Pelee. Near Leaming-

ton, in a small grove on Lake Erie shore, trees were noticed sixty feet high and two feet in diameter three feet from the ground. On Ohio shore some of the trees reported to be two and one-half feet in diameter four feet from the ground.

Benzoin aestivale (L.) Nees (SPICE BUSH)

Frequent at Point Pelee in damp open woods and thickets, and on Pelee island Ohio shore.

PAPAVERACEAE (POPPY FAMILY.)

Sanguinaria canadensis L. (BLOODROOT)

Frequent at Point Pelee in rich woods and thickets. Islands and Ohio shore

FUMARIACEAE (FUMITORY FAMILY)

Dicentra Cucullaria (L.) Bernh. (DUTCHMAN'S BREECHES.)

Noticed in sandy ground at Point Pelee among low junipers. Apparently rare. Islands and Ohio shore

Dicentra canadensis (Goldie) Walp. (SQUIRREL CORN)

In rich woods about Windsor (F. P. Cravin)

Corydalis flavula (Raf.) DC. (PALE CORYDALIS)

Plentiful at Point Pelee in rich woods. (P. A. Taverner)
Islands and Ohio shore

Corydalis aurea Willd. (GOLDEN CORYDALIS)

Ohio shore

Fumaria officinalis L. (COMMON FUMITORY)

Kelley island and Ohio shore

CRUCIFERAE (MUSTARD FAMILY)

Draba verna L. (WHITLOW GRASS)

In sandy waste places and on roadsides about Windsor.
(F. P. Cravin)

Draba caroliniana Walt. (CAROLINA WHITLOW GRASS)

Plentiful at Point Pelee in dry open ground near Albert Gardner's farm, and on Pelee island Ohio shore

***Alyssum alyssoides* L. (YELLOW ALYSSUM)**

Noticed at Point Pelee as a weed in dry open ground
near dwellings Islands and Ohio shore

***Thlaspi arvense* L. (FIELD PENNY CRESS)**

A weed about villages and towns.

***Ledipium virginicum* L. (WILD PEPPERGRASS)**

Common at Point Pelee in gardens and fields Islands
and Ohio shore

***Ledipium apetalum* Willd. (APETALOUS PEPPERGRASS.)**

Occasional at Point Pelee near dwellings and in gardens,
and on Pelee island. Along Detroit river

***Lepidium campestre* (L.) R. Br. (FIELD CRESS)**

Occasional at Point Pelee about dwellings and along
roads Put-in-Bay and Kelley island

***Capsella Bursa-pastoris* (L.) Medic. (SHEPHERD'S PURSE)**

A common weed at Point Pelee in gardens and cultivated
fields. Abundant on the islands and Ohio shore

***Camelina sativa* (L.) Crantz (FALSE FLAX)**

Occasional at Point Pelee as a weed about dwellings

***Cakile edentula* (Bigel.) Hook. (AMERICAN SEA ROCKET)**

Common at Point Pelee on the sandy beach, often below
the wave line Islands and Ohio shore

***Brassica arvensis* (L.) Ktze (COMMON MUSTARD)**

A weed at Point Pelee in cultivated fields but apparently
infrequent Abundant on the islands and Ohio shore.

***Brassica nigra* (L.) Koch (BLACK MUSTARD)**

Occasional at Point Pelee as a weed about dwellings and
in gardens Islands and Ohio shore

***Alliaria officinalis* Andr. (GARLIC MUSTARD)**

Kelley island

***Sisymbrium officinale* (L.) Scop., var *leiocarpum* DC
(HEDGE MUSTARD)**

Occasional at Point Pelee as a weed about dwellings.
Islands and Ohio shore

***Sisymbrium altissimum* L. (TUMBLE MUSTARD)**

A weed in towns and along roads

***Sisymbrium canescens* Nutt (TANSY MUSTARD)**

Common at Point Pelee in dry open or shaded ground
Islands and Ohio shore.

Sisymbrium canescens Nutt , var **brachycarpon** (Richards.)
Wats. (TANSY MUSTARD)

At Point Pelee (Canadian Catalogue of Plants)

Erysimum cheiranthoides L (WORM-SEED MUSTARD)

Occasional at Point Pelee as a weed about dwellings and
in old fields Pelee island

Radicula Nasturtium-aquaticum (L) Britten and Rendle.
(TRUE WATER CRESS)

In ditches and creeks about Windsor (F P Cravin)

Radicula sylvestris (L) Druce (YELLOW CRESS)

Along roads near Leamington

Radicula palustris (L) Moench (MARSH CRESS)

Occasional at Point Pelee in wet places on borders of
the big marsh Islands and Ohio shore

Radicula palustris (L) Moench, var **hispida** (Desv) Robin-
son (HISPID YELLOW CRESS)

Islands and Ohio shore

Radicula Armoracia (L) Robinson (HORSERADISH)

Occasional at Point Pelee as an escape Islands and
Ohio shore

Barbarea vulgaris R Br (COMMON WINTER CRESS)

Frequent at Point Pelee as a weed in gardens and fields
Green island and Ohio shore

Barbarea stricta Andrz (ERECT-FRUITED WINTER CRESS)
Green island

Dentaria diphylla Michx (TWO-LEAVED TOOTHWORT)

In rich shaded ground about Windsor (F P Cravin)

Dentaria laciniata Muhl (CUT-LEAVED TOOTHWORT)

In rich shaded ground along Detroit river Islands

Cardamine bulbosa (Schreb) BSP (SPRING CRESS)

Occasional at Point Pelee in damp rich woods Ohio
shore

Cardamine Douglassii (Torr) Britton (PURPLE CRESS)

In rich woods at Point Pelee Islands and Ohio shore

Cardamine pennsylvanica Muhl (PENNSYLVANIA BITTER
CRESS)

In wet shaded places at Point Pelee Islands and Ohio
shore

Arabis lyrata L (LYRE-LEAVED ROCK CRESS)

Common at Point Pelee in open dry ground, and on Pelee island Ohio shore

Arabis dentata T and G (TOOTHED ROCK CRESS)

Common at Point Pelee in dry open or shaded ground along "the narrows " Johnson, North Bass, and Green islands

Arabis glabra (L) Bernh (TOWER MUSTARD)

Occasional at Point Pelee in dry open or slightly shaded ground Johnson island

Arabis Drummondii Gray (PURPLE ROCK CRESS)

Islands and Ohio shore

Arabis hirsuta (L) Scop (HAIRY ROCK CRESS)

Mouse island and Ohio shore

Arabis laevigata (Muhl) Poir (SMOOTH ROCK CRESS)

Plentiful at Point Pelee in dry open woods Islands and Ohio shore

Arabis canadensis L (SICKLE-POD)

Occasional at Point Pelee in dry open woods and on Pelee island Johnson, Put-in-Bay, and Middle Bass islands and Ohio shore

CAPPARIDACEAE (CAPER FAMILY)

Polanisia graveolens Raf (CLAMMY-WEED)

Common at Point Pelee on the sandy beach It has crept into sandy gardens and fields and become a troublesome weed Islands and Ohio shore

RESEDACEAE (MIGNONETTE FAMILY)

Reseda lutea L (YELLOW CUT-LEAVED MIGNONETTE)

Kelley island

DROSERACEAE (SUNDEW FAMILY)

Drosera rotundifolia L (ROUND-LEAVED SUNDEW)

In swampy places about Windsor. (F P Cravin)

Penthorum sedoides L. (DITCH STONECROP)

Occasional at Point Pelee in open wet places. Islands and Ohio shore.

Sedum acre L. (MOSSY STONECROP)

Occasional at and near Point Pelee in dry sandy ground. Kelley island and Ohio shore.

Sedum ternatum Michx (WILD STONECROP)

Put-in-Bay island

Sedum purpureum Tausch (LIVE-FOR-EVER.)

Occasional at Point Pelee near dwellings as an escape, and on Pelee island Put-in-Bay and North Bass islands and Ohio shore.

SAXIFRAGACEAE (SAXIFRAGE FAMILY)

Tiarella cordifolia L. (FALSE MITERWORT)

In rich woods at Point Pelee (Wallace Tilden) Apparently rare

Heuchera americana L. (COMMON ALUM ROOT)

On Pelee island and near Amherstburg The other islands

Mitella diphylla L. (TWO-LEAVED BISHOP'S CAP)

Common in rich shaded ground about Windsor

Parnassia caroliniana Michx (CAROLINE GRASS OF PARNASSUS)

In damp spots along north shore of Lake Erie, and near Sandwich

Ribes cynosbati L. (PRICKLY GOOSEBERRY)

Frequent at Point Pelee in damp open woods and thickets. Islands and Ohio shore.

Ribes floridum L'Her (WILD BLACK CURRANT)

Common at Point Pelee in damp woods and thickets and on Pelee island Kelley island and Ohio shore.

Ribes aureum Pursh (MISSOURI CURRANT)

Noticed as an occasional escape on Pelee island Kelley island

HAMAMELIDACEAE (WITCH-HAZEL FAMILY.)

Hamamelis virginiana L. (WITCH-HAZEL)

Common at Point Pelee in open dry woods.

PLATANACEAE (PLANE TREE FAMILY)

Platanus occidentalis L. (SYCAMORE)

Frequent at Point Pelee in rich ground with other trees.
Islands and Ohio shore

ROSACEAE (ROSE FAMILY)

Physocarpus opulifolius (L) Maxim. (NINE-BARK)

Common on the islands and Ohio shore

Spiraea salicifolia L (MEADOW-SWEET)

Frequent at Point Pelee in damp open places.

Pyrus communis L (COMMON PEAR.)

Several large trees, apparent escapes, along north shore
of Lake Erie Put-in-Bay and Kelly islands and Ohio
shore

Pyrus coronaria L. (AMERICAN CRAB)

Not noticed at Point Pelee, but plentiful farther west
along north shore of Lake Erie. Near Amherstburg.
(Macoun) Put-in-Bay island.

Pyrus Malus L (APPLE)

Frequent at Point Pelee in open ground Islands and
Ohio shore

Pyrus cydonia L (COMMON QUINCE.)

Several fine looking trees in waste places along north
shore of Lake Erie, but perhaps not escapes

Pyrus melanocarpa (Michx) Willd. (BLACK CHOKEBERRY.)

Common about Windsor Ohio shore.

Pyrus americana (Marsh) DC (AMERICAN MOUNTAIN
ASH)

Occasionally planted in Essex county. Rattlesnake and
Put-in-Bay islands. Probably from seeds dropped
by birds

Amelanchier canadensis (L.) Medic (COMMON JUNE-BERRY.)

Frequent at Point Pelee in open woods Islands and Ohio shore

Amelanchier oblongifolia (T and G.) Roem (SHAD-BUSH.)

Occasional at Point Pelee in open sandy ground Mouse and Kelley island and Ohio shore

Amelanchier spicata (Lam.) C Koch (ROUND-LEAVED JUNE-BERRY)

Abundant in spots at Point Pelee in open sandy ground.

Crataegus Oxyacantha L (ENGLISH HAWTHORNE)

Occasionally planted as an ornamental tree and in hedges but perhaps not yet escaping

Crataegus Crus-galli L (COCKSPUR THORN)

Occasional at Point Pelee in open places and borders of woods, and on Pelee island Ohio shore

Crataegus punctata Jacq (LARGE-FRUITED THORN)

Common at Point Pelee in open places and open woods
One tree noticed near Kingsville, two feet in diameter two feet from ground

Crataegus tomentosa L (PEAR THORN)

Kelley and Middle Bass islands

Crataegus mollis (T and G.) Schelle (RED-FRUITED THORN)

Frequent at Point Pelee and on Pelee island Along Detroit river Kelley island and Ohio shore

Fragaria virginiana Duchesne (COMMON STRAWBERRY)

Common at Point Pelee and on Pelee island Kelley, Put-in-Bay, and Mouse islands and Ohio shore

Fragaria virginiana Duchesne, var **illinoensis** (Prince) Gray (ILLINOIS STRAWBERRY)

Kelley, Put-in-Bay, and Mouse islands and Ohio shore

Fragaria vesca L, var **americana** Porter (AMERICAN WOOD STRAWBERRY)

Frequent at Point Pelee in rich open woods Kelley and Put-in-Bay islands and Ohio shore

Waldsteinia fragarioides (Michx.) Trattinick (BARREN STRAWBERRY)

Frequent about Windsor (F. P. Cravin)

Potentilla arguta Pursh. (TALL CINQUEFOIL.)

Put-in-Bay island and Ohio shore.

Potentilla monspeliensis L. (ROUGH CINQUEFOIL.)

Occasional at Point Pelee as a weed about dwellings and in old fields, and on Pelee island Put-in-Bay island and Ohio shore

Potentilla paradoxa Nutt (BUSHY CINQUEFOIL.)

Abundant in spots at Point Pelee in open sandy ground and along north shore of Lake Erie

Potentilla argentea L (SILVERY CINQUEFOIL)

Common about Windsor on poor open ground

Potentilla palustris (L.) Scop. (MARSH FIVE-FINGER)

Frequent at Point Pelee in wet places in and about the big marsh.

Potentilla Anserina L. (SILVER WEED)

Common at Point Pelee and often abundant, usually in dry sandy ground near the lake shore Pelee island, Middle Bass, North Bass, and Rattlesnake islands, and Ohio shore

Potentilla canadensis L (COMMON CINQUEFOIL.)

Occasional at Point Pelee in dry open ground, and on Pelee island. Ohio shore.

Potentilla canadensis L, var **simplex** (Michx) T. and G. (LARGER COMMON CINQUEFOIL)

Near Amherstburg (Macoun)

Filipendula rubra (Hill) Robinson. (QUEEN OF THE PRAIRIE.) Ohio shore.**Geum canadense** Jacq (WHITE AVENS)

Common at Point Pelee in rich woods and thickets. Common on the islands and Ohio shore.

Geum virginianum L. (ROUGH AVENS)

Pelee island Along Detroit river. Put-in-Bay island.

Geum strictum Ait. (YELLOW AVENS.)

Common about Windsor. (F P. Cravin)

Geum vernum (Raf) T and G (SPRING AVENS)

Pelee island. Near Amherstburg. (Macoun.) Common about Windsor Johnson island and Ohio shore.

Geum rivale L. (WATER AVENS)

In damp open or shaded ground about Windsor. (F. P. Cravin)

Rubus idaeus L., var. **canadensis** Richardson (*R. strigosus* Michx. of most authors) (WILD RED STRAWBERRY) See Rhodora XI-236.

Occasional at Point Pelee in dry open places, and on Pelee island Ohio shore

Rubus neglectus Peck (PURPLE WILD RASPBERRY)

Near Amherstburg (Macoun)

Rubus occidentalis L. (BLACK RASPBERRY)

Frequent at Point Pelee in rich open woods Islands and Ohio shore

Rubus odoratus L. (PURPLE FLOWERING RASPBERRY)

A large bunch on the bank of a big ditch in the big marsh at Point Pelee Not noticed elsewhere

Rubus triflorus Richards (DWARF RASPBERRY)

Common in damp shaded ground about Windsor

Rubus allegheniensis Porter (*R. villosus* of many authors) (HIGH BUSH BLACKBERRY)

Frequent at Point Pelee in dry open and often shaded ground Islands and Ohio shore

Rubus hispidus L. (RUNNING SWAMP BLACKBERRY)

Common about Windsor

Rubus villosus Ait (*R. canadensis* of most authors) (DEWBERRY)

Occasional at Point Pelee in dry sandy ground Islands and Ohio shore

Agrimonia gryposepala Wallr. (TALL HAIRY AGRIMONY)

Frequent at Point Pelee in open or slightly shaded ground especially along "the narrows," and on Pelee island Kelley island and Ohio shore

Agrimonia parviflora Ait. (MANY-FLOWERED AGRIMONY)

Frequent at Point Pelee in dry open ground, and on Pelee island Along north shore of Lake Erie Ohio shore

- Rosa setigera** Michx (CLIMBING ROSE)
Pelee island, and near Amherstburg (Macoun) South shore of Lake St Clair. Johnson, Mouse, Kelley, and Middle Bass islands, and Ohio shore.
- Rosa blanda** Ait (MEADOW ROSE)
Pelee island, Old Hen island, and Ohio shore
- Rosa rubiginosa** L (SWEETBRIER)
Common at Point Pelee on flat, dry, open ground Islands and Ohio shore
- Rosa carolina** L (SWAMP ROSE)
Frequent at Point Pelee in low damp open places. Islands and Ohio shore.
- Rosa humilis** Marsh (PASTURE ROSE)
Along Detroit river and near Leamington (Macoun) Kelley and Put-in-Bay islands and Ohio shore
- Prunus serotina** Ehrh (WILD BLACK CHERRY)
Frequent at Point Pelee, especially along "the narrows" Islands and Ohio shore
- Prunus virginiana** L (CHOKE CHERRY)
Frequent at Point Pelee on border of woods Islands and Ohio shore
- Prunus pennsylvanica** L f (WILD RED CHERRY.)
Common along north shore of Lake Erie
- Prunus instititia** L (BULLACE PLUM)
Noticed growing wild on Pelee island by Prof John Macoun
- Prunus pumila** L (SAND CHERRY)
Frequent at Point Pelee in sandy open ground and on upper beach. Ohio shore
- Prunus avium** L (SWEET CHERRY)
A few trees noticed along shore of Lake Erie, apparently permanent escapes Kelley island
- Prunus Cerasus** L (COMMON CHERRY)
Frequent as an escape at Point Pelee and on Pelee island.
- Prunus americana** Marsh (WILD PLUM)
Noticed on Pelee island Along north shore of Lake Erie Kelley and Put-in-Bay islands

Prunus Persica (L.) Stokes (PEACH)

Inclined to persist on the islands of Lake Erie, and Ohio shore

LEGUMINOSAE (PULSE FAMILY)

Gymnocladus dioica (L.) Koch (KENTUCKY COFFEE-TREE.)

Noticed in 1882 on Pelee island by Prof John Macoun.

Not seen in 1912 The other islands and Ohio shore

Gleditsia triacanthos L (HONEY LOCUST)

Many trees large and small growing on and near the beach on the west side of Point Pelee, and occasional along north shore of Lake Erie to Detroit river The islands and Ohio shore

Cassia marilandica L (WILD SENNA)

Johnson island and Ohio shore.

Cassia Chamaecrista L (PARTRIDGE PEA)

Ohio shore

Cercis canadensis L. (REDBUD)

Pelee island (Macoun) Ohio shore

Baptisia tinctoria (L.) R Br (WILD INDIGO)

Near Colchester and Sandwich (Macoun) Near Leamington and Windsor

Lupinus perennis L (WILD LUPINE)

Near Sandwich and Leamington in dry open ground

Trifolium arvense L (RABBIT-FOOT CLOVER)

In waste places about Windsor (F P Cravin)

Trifolium pratense L (RED CLOVER)

Frequent at Point Pelee in open ground Islands and Ohio shore

Trifolium reflexum L (BUFFALO CLOVER)

Islands of Detroit river Johnson island

Trifolium repens L (WHITE CLOVER)

Occasional at Point Pelee in old fields and pastures Islands and Ohio shore

Trifolium hybridum L (ALSIKE CLOVER)

Occasional at Point Pelee on and near cultivated ground.

Put-in-Bay island and Ohio shore

Trifolium agrarium L (YELLOW CLOVER)

Frequent about Windsor. (F. P Cravin)

Trifolium procumbens L. (LOW HOP CLOVER.)

Gibraltar island in Lake Erie

Melilotus officinalis (L) Lam (YELLOW MELILOT)

Occasional at Point Pelee near dwellings Johnson and
Put-in-Bay islands and Ohio shore

Melilotus alba Desr (SWEET CLOVER)

Occasional at Point Pelee about dwellings and road-
sides. Common along Detroit river Abundant in
fields about Windsor Abundant on the islands and
Ohio shore

Medicago sativa L (ALFALFA)

Rare at Point Pelee Occasional throughout Essex
county Put-in-Bay island and Ohio shore

Medicago lupulina L (BLACK MEDICK)

Frequent at Point Pelee about dwellings Islands and
Ohio shore

Robinia Pseudo-Acacia L (COMMON LOCUST)

Inclined to escape and persist at Point Pelee Islands
and Ohio shore

Astragalus canadensis L (CAROLINA MILK VETCH)

Frequent along the north shore of Lake Erie Islands
and Ohio shore

Desmodium nudiflorum (L) DC (NAKED-FLOWERED TICK
TREFOIL)

Ohio shore

Desmodium grandiflorum (Walt) DC (POINTED-LEAVED
TICK TREFOIL)

Ohio shore

Desmodium rotundifolium (Michx) DC. (POSTRATE TICK
TREFOIL)

Ohio shore

Desmodium canescens (L) DC (HOARY TICK TREFOIL.)

Occasional at Point Pelee in sandy open ground, and
along north shore of Lake Erie Islands and Ohio
shore

Desmodium bracteosum (Michx) DC. (LARGE-BRACTED
TICK TREFOIL)

Along north shore of Lake Erie Ohio shore

Desmodium illinoense Gray (ILLINOIS TICK TREFOIL.)
Ohio shore

Desmodium Dillenii Darl (DILLEN'S TICK TREFOIL)
Occasional at Point Pelee in dry shaded ground, and along
north shore of Lake Erie Put-in-Bay island

Desmodium paniculatum (L) DC (PANICLED TICK TRE-
FOIL)

Occasional at Point Pelee in dry open or slightly shaded
ground Put-in-Bay island and Ohio shore

Desmodium canadense (L) DC (SHOWY TICK TREFOIL)
North shore of Lake Erie and along Detroit river. Along
Lake St Clair Ohio shore

Desmodium sessilifolium (Torr) T. and G (SESSILE-LEAVED
TICK TREFOIL)

Dry shaded ground near Amherstburg

Desmodium rigidum (Ell) DC (RIGID TICK TREFOIL)
Ohio shore

Lespedeza violacea (L) Pers (BUSH CLOVER)
Ohio shore

Lespedeza virginica (L) Britton
In thickets along Detroit river and near Leamington.
(Macoun)

Lespedeza frutescens (L) Britton (WAND-LIKE BUSH CLO-
VER)
Sandy woods and thickets in Essex county (Macoun)
Ohio shore

Lespedeza hirta (L) Hornem (HAIRY BUSH CLOVER)
Ohio shore

Lespedeza capitata Michx (ROUND-LEAVED BUSH CLOVER)
Along Detroit river Ohio shore

Vicia sativa L. (SPRING VETCH)
North Bass and Rattlesnake islands and Ohio shore

Vicia angustifolia (L) Reichard (COMMON VETCH)
Frequent as a weed about Windsor

Vicia caroliniana Walt (CAROLINA VETCH.)

Along Detroit river Islands and Ohio shore

Vicia americana Muhl (AMERICAN VETCH)

Kelley and North Bass island and Ohio shore.

Lathyrus maritimus (L.) Bigel (BEACH PEA)

Along north shore of Lake Erie Apparently infrequent.
Ohio shore

Lathyrus palustris L (MARSH VETCHLING)

Frequent at Point Pelee on damp meadow-like ground.
Islands and Ohio shore

Lathyrus ochroleucus Hook (CREAM-COLOURED VETCH-
LING)

Islands and Ohio shore

Apios tuberosa Moench (WILD BEAN)

Common at Point Pelee along "the narrows" and borders
of woods and thickets, and on Pelee island Ohio shore.

Strophostyles helvola (L.) Britton (TRAILING WILD BEAN.)

Frequent and often abundant at Point Pelee in damp
sand, and along the beach Islands and Ohio shore

Amphicarpa monoica (L.) Ell (HOG PEANUT)

Frequent at Point Pelee in dry open ground and open
woods Islands and Ohio shore

Amphicarpa Pitcheri T and G (PITCHER'S HOG PEANUT.)

Frequent at Point Pelee along "the narrows" Islands
and Ohio shore

LINACEAE (FLAX FAMILY)

Linum usitatissimum L (COMMON FLAX)

Occasional at Point Pelee about farm buildings. Kelley
island

Linum sulcatum Riddell (GROOVED YELLOW FLAX)

Occasional about Windsor (F. P. Cravin) Ohio shore.

OXALIDACEAE (WOOD SORREL FAMILY)

Oxalis violacea L (VIOLET WOOD SORREL)

Ohio shore

Oxalis corniculata L. (LADY'S SORREL.)

Frequent at Point Pelee in meadow-like ground, gardens,
and fields Islands and Ohio shore.

GERANIACEAE (GERANIUM FAMILY)

Geranium maculatum L (WILD CRANESBILL)

Common at Point Pelee in open ground and open woods,
and on Pelee island Kelley island and Ohio shore.

Geranium Robertianum L (HERB ROBERT)

Abundant at Point Pelee under red cedars and pines or in
damp rich woods Islands and Ohio shore

Geranium carolinianum L (CAROLINA CRANESBILL)

Occasional at Point Pelee in dry open ground Islands
and Ohio shore

RUTACEAE (RUE FAMILY)

Zanthoxylum americanum Mill (NORTHERN PRICKLY ASH)

Common at Point Pelee in and about borders of woods
and thickets, and on Pelee island Kelley and Middle
Bass islands and Ohio shore

Ptelea trifoliata L (SHRUBBY TREFOIL)

Frequent at Point Pelee along "the narrows" and in other
places Reported as formerly much more abundant
Known at Point Pelee as "Wahoo" Along north shore
of Lake Erie Plentiful on Pelee island Common on
the other islands and Ohio shore

SIMARUBACEAE (QUASSIA FAMILY)

Allanthus glandulosa Desf (TREE-OF-HEAVEN)

Escaping in Essex county Islands and Ohio shore

POLYGALACEAE (MILKWORT FAMILY)

Polygala polygama Walt (RACEMED MILKWORT)

In dry ground about Windsor (F P Cravin)

Polygala Senega L (SENECA SNAKEROOT.)

Ohio shore

Polygala Senega L., var. **latifolia** T. and G (SENECA SNAKEROOT)

Ohio shore

Polygala sanguinea L. (PURPLE MILKWORT)

Point Pelee (Burgess) Near Windsor (J. M. Macoun)

Polygala verticillata L (WHORLED MILKWORT)In dry open ground from Amherstburg to Sandwich.
Ohio shore

EUPHORBIACEAE (SPURGE FAMILY)

Acalypha virginica L (VIRGINIA THREE-SEEDED MERCURY)

Frequent at Point Pelee in open places and often abundant as a weed in cultivated fields Islands and Ohio shore

Euphorbia polygonifolia L (SEASIDE SPURGE)A characteristic plant of the sandy beach at Point Pelee
Islands and Ohio shore**Euphorbia serpens HBK** (ROUND-LEAVED SPREADING SPURGE)

Johnson island

Euphorbia Preslii Guss (UPRIGHT SPOTTED SPURGE)

Occasional at Point Pelee in dry open ground Islands and Ohio shore

Euphorbia hirsuta (Torr) Wiegand (HAIRY SPURGE)

Along railway embankments about Windsor

Euphorbia maculata L (MILK PURSLANE)Frequent at Point Pelee near dwellings and on roadsides
Islands and Ohio shore**Euphorbia corollata L** (FLOWERING SPURGE)

Occasional at Point Pelee in open dry ground Ohio shore

Euphorbia dentata Michx (TOOTHED SPURGE)

Islands and Ohio shore.

Rhus canadensis Marsh (FRAGRANT SUMACH)

Very abundant at Point Pelee in dry woods and open dry ground Also abundant in sand on the west beach where, with low junipers in large and thick bunches, it forms an efficient sand binder against the action of wind Islands and Ohio shore

AQUIFOLIACEAE (HOLLY FAMILY)

Ilex verticillata (L) Gray (BLACK ALDER)

Occasional at Point Pelee in damp thickets, and on Pelee island Green island

Ilex verticillata (L) Gray, var **tenuifolia** (Torr) Wats (BRONX WINTERBERRY.)

Near Sandwich and Leamington (Macoun)

CELASTRACEAE (STAFF TREE FAMILY)

Evonymus atropurpureus Jacq (BURNING BUSH)

Occasional at Point Pelee in shaded ground (Wallace Tilden) Pelee island White island in Detroit river, Hen and Kelley islands, and Ohio shore

Evonymus obovatus Nutt (RUNNING STRAWBERRY BUSH)

Frequent at Point Pelee in rich shaded ground Along Lake St Clair Islands and Ohio shore

Celastrus scandens L (BITTERSWEET)

Very common at Point Pelee in woods and thickets Islands and Ohio shore

STAPHYLEACEAE (BLADDER NUT FAMILY)

Staphylea trifolia L (AMERICAN BLADDER NUT)

Occasional near Windsor (F. P Cravin) Green island and Ohio shore

ACERACEAE (MAPLE FAMILY)

Acer spicatum Lam (MOUNTAIN MAPLE)

In rich woods about Windsor (F P. Cravin)

Euphorbia platyphylla L (BROAD-LEAVED SPURGE)

Near Colchester and along Detroit river

Euphorbia Helioscopia L (WARTWEED)

Near Essex Centre (Burgess)

Euphorbia Cyparissias L (CYPRESS SPURGE)Occasional at Point Pelee in open dry ground Islands
and Ohio shore**Euphorbia commutata** Engelm (TINTED SPURGE)

Johnson island

LIMNANTHACEAE (FALSE MERMAID FAMILY)

Floerkea proserpinacoides Willd (FALSE MERMAID)

On an island of Detroit river near Amherstburg

ANACARDIACEAE (CASHEW FAMILY)

Rhus typhina L (STAGHORN SUMACH)Frequent at Point Pelee in dry open or slightly shaded
ground Islands and Ohio shore**Rhus glabra** L (SMOOTH SUMACH)Plentiful on Pelee island The other islands and Ohio
shore**Rhus Vernix** L (POISON SUMACH)Frequent at Point Pelee in damp ground along "the
narrows" and in swampy places, and on Pelee island.**Rhus Toxicodendron** L (POISON IVY)Very common at Point Pelee in dry or damp, rich, open
or shaded ground. Often taking complete possession
of trees forty and fifty feet high, the vines being in
many cases more than three inches in diameter one
foot from the ground A low shrub when not climbing
The climbing form often referred to as *Toxicoden-*
dron L, var *radicans* (L.) Torr, climbing poison ivy.
Islands and Ohio shore

Acer saccharum Marsh (*A. saccharinum* Wang.) (SUGAR MAPLE)

Occasional at Point Pelee with other trees. Islands and Ohio shore

Acer saccharum Marsh, var **nigrum** (Michx f) Britton. (BLACK MAPLE)

Along "the narrows" at Point Pelee, and on Pelee island Kelley and North Bass islands, and Ohio shore
A southern fern was noticed on Pelee island, named by Prof C S Sargent, *A saccharum rugelm* Rehd.
Leaves three-lobed

Acer saccharinum L (*A dasycarpum* Ehrh) (SILVER MAPLE)

Occasional at Point Pelee in rich ground with other trees Islands and Ohio shore

Acer rubrum L (RED MAPLE)

Frequent at Point Pelee in rich ground with other trees, and on Pelee island

Acer Negundo L (BOX ELDER)

Occasionally planted and escaping at Point Pelee and on Pelee island Put-in-Bay island and Ohio shore

SAPINDACEAE (SOAPBERRY FAMILY)

Aesculus Hippocastanum L (COMMON HORSE-CHESTNUT)

Often planted in Essex county, and apparently spreading along north shore of Lake Erie

Aesculus glabra Willd (FETID BUCKEYE)

Johnson, Middle Bass, and North Bass islands and Ohio shore

BALSAMINACEAE (TOUCH-ME-NOT FAMILY)

Impatiens pallida Nutt (PALE TOUCH-ME-NOT)

Frequent about Windsor (F P Cravin) Old Hen and Rattlesnake islands

Impatiens biflora Walt (SPOTTED TOUCH-ME-NOT)

Common at Point Pelee in wet open or shaded places. Islands and Ohio shore

RHAMNACEAE (BUCKTHORN FAMILY)

Rhamnus alnifolia L'Her. (ALDER-LEAVED BUCKTHORN)

In damp open ground near Lake St. Clair.

Ceanothus americanus L (NEW JERSEY TEA)

Frequent at Point Pelee in dry open or shaded ground
Ohio shore

Ceanothus ovatus Desf (SMALLER RED-ROOT)

Occasional at Point Pelee in dry open or shaded ground.
Ohio shore.

VITACEAE (VINE FAMILY)

Pseodera vitacea (Knerr) Greene (*Ampelopsis quinquefolia*
of most authors) (VIRGINIA CREEPER)

Common at Point Pelee in shaded ground Islands
and Ohio shore.

Vitis labrusca L (NORTHERN FOX GRAPE)

Many patches of the cultivated grape persisting at Point
Pelee and on Pelee island apparently belong to or
are varieties of this species

Vitis bicolor Le Conte (SUMMER GRAPE)

Frequent at Point Pelee in shaded or open ground and
on Pelee island

Vitis cordifolia Michx (FROST GRAPE)

Johnson island

Vitis vulpina L (RIVER-BANK GRAPE)

Common at Point Pelee in open or shaded ground
Islands and Ohio shore

TILIACEAE (LINDEN FAMILY)

Tilia americana L (BASSWOOD)

Common at Point Pelee in rich ground with other trees
Islands and Ohio shore.

Tilia Michauxii Nutt (SOUTHERN BASSWOOD.)

Reported as growing near Sandwich and along Lake
St. Clair.

MALVACEAE (MALLOW FAMILY)

Abutilon Theophrasti Medic (INDIAN MALLOW)

Occasional at Point Pelee as a garden weed Common
on the islands

Althaea rosea Cav (HOLLYHOCK)

Inclined to escape and persist on the islands in Lake Erie.
Ohio shore

Sida spinosa L. (PRICKLY SIDA)

Kelley island and Ohio shore

Malva rotundifolia L (COMMON MALLOW)

Frequent at Point Pelee as a weed about dwellings and
waste places Islands and Ohio shore

Malva moschata L (MUSK MALLOW)

Along north shore of Lake Erie and on islands in Detroit
river Kelley island

Hibiscus Moscheutos L (SWAMP ROSE MALLOW)

Occasional at Point Pelee on borders of the big marsh
Reported as formerly abundant Abundant in many
places along the north shore of Lake Erie Islands of
Detroit river Along shore of Lake St Clair North
Bass island Dr E L Greene has named this plant
H opulifolius, believing it to be a new species

Hibiscus Trionum L (FLOWER-OF-AN-HOUR)

Kelley island and Ohio shore

HYPERICACEAE (ST JOHN'S-WORT FAMILY)

Hypericum perforatum L (COMMON ST JOHN'S-WORT)

Frequent at Point Pelee along roads and in old fields and
on Pelee island, Kelley island, and Ohio shore

Hypericum punctatum Lam (SPOTTED ST JOHN'S-WORT)

Occasional at Point Pelee in shaded ground Rattle-
snake island and Ohio shore

Hypericum prolificum L (SHRUBBY ST JOHN'S-WORT)

Frequent about Windsor (F P Cravin)

Hypericum Kalmianum L (KALM'S ST JOHN'S-WORT)

Islands in Lake Erie

Hypericum mutilum L (DWARF ST. JOHN'S-WORT)

Frequent in low open ground about Windsor. (F. P. Cravin) Ohio shore

Hypericum majus (Gray) Britton (LARGER CANADIAN ST. JOHN'S-WORT)

In damp open ground about the big marsh at Point Pelee

Hypericum gentianoides (L.) BSP (ORANGE GRASS)

In sandy fields at Sandwich (Macoun)

Hypericum virginicum L (MARSH ST JOHN'S-WORT)

Common at Point Pelee in and about the big marsh Ohio shore.

CISTACEAE (ROCKROSE FAMILY.)

Helianthemum canadense (L ?) Michx (LONG-BRANCHED FROSTWEED)

Near Sandwich. (Macoun) In dry open ground near Lake St Clair.

Helianthemum majus BSP. (HAIRY FROSTWEED)

On Cedar point, Ohio shore.

Lechea villosa Ell (LARGE PINWEED.)

Very common about Windsor in dry open ground. Cedar point, Ohio shore

Lechea minor L (THYME-LEAVED PINWEED)

In open or slightly shaded ground near Windsor.

VIOLACEAE (VIOLET FAMILY)

Viola cucullata Ait (MARSH BLUE VIOLET)

Common about Windsor in swampy places

Viola palmata L (EARLY BLUE VIOLET)

In damp woods near Amherstburg Ohio shore

Viola sororia Willd (WOOLLY BLUE VIOLET)

Common at Point Pelee in shaded ground Ohio shore

Viola fimbriatula Sm (OVATE-LEAVED VIOLET)

Common about Windsor

- Viola sagittata** Ait (ARROW-LEAVED VIOLET.)
Near Amherstburg Common about Windsor
- Viola pedatifida** G. Don (PRAIRIE VIOLET)
Ohio shore, but scarce
- Viola incognita** Brainerd (SWEET WHITE VIOLET.)
Frequent at Point Pelee in rich shaded ground Islands
and Ohio shore
- Viola pubescens** Ait (DOWNY YELLOW VIOLET)
Frequent at Point Pelee in dry shaded ground Islands
and Ohio shore
- Viola scabriuscula** Schwein (SMOOTH YELLOW VIOLET)
Frequent at Point Pelee in rich woods and thickets.
Islands and Ohio shore
- Viola striata** Ait (PALE VIOLET)
Near Amherstburg Ohio shore
- Viola Rafinesquii** Greene (WILD PANSY)
On Pelee island (Macoun) Johnson and Put-in-Bay
islands and Ohio shore

CACTACEAE (CACTUS FAMILY)

- Opuntia Rafinesquii** Engelm (WESTERN PRICKLY PEAR)
Abundant in spots at Point Pelee in dry open ground

THYMELAEACEAE (MEZERFUM FAMILY)

- Dirca palustris** L (LEATHERWOOD)
Frequent in shaded ground near Colchester

ELAEAGNACEAE (OLEASTER FAMILY)

- Shepherdia canadensis** (L) Nutt (BUFFALO BERRY)
Common at Point Pelee in dry open or shaded ground

LYTHRACEAE (LOOSESTRIFE FAMILY)

- Rotala ramosior** (L.) Koehne (ROTALA)
Ohio shore, but rare

Ammannia coccinea Rottb. (LONG-LEAVED AMMANIA.)

Ohio shore.

Decodon verticillatus (L) Ell. (WATER WILLOW)

Very abundant in spots at Point Pelee in and about the big marsh Islands and Ohio shore

Lythrum alatum Pursh. (WING-ANGLED LOOSESTRIFE.)

In damp places along north shore of Lake Erie, Detroit river, and east of Windsor. Put-in-Bay and Middle Bass islands and Ohio shore

ONAGRACEAE (EVENING PRIMROSE FAMILY)

Ludvigia alternifolia L (SEEDBOX)

In swampy ground, meadows, and pastures near Sandwich and Windsor (Alex Wherry)

Ludvigia polycarpa Short and Peter. (MANY-FRUITED LUDVIGIA.)

In damp ground along railway track near Amherstburg. (Macoun)

Ludvigia palustris (L) Ell (WATER PURSLANE)

In wet places at Point Pelee. Ohio shore.

Epilobium angustifolium L (GREAT WILLOW-HERB)

Ohio shore

Epilobium densum Raf (LINEAR-LEAVED WILLOW-HERB.)

Ohio shore

Epilobium coloratum Muhl (PURPLE-LEAVED WILLOW-HERB)

Kelley and Middle Bass islands and Ohio shore.

Epilobium adenocaulon Haussk (NORTHERN WILLOW-HERB.)

Occasional at Point Pelee in damp open ground and on Pelee island. Kelley and North Bass islands and Ohio shore

Oenothera biennis L (COMMON EVENING PRIMROSE.)

Common at Point Pelee in dry open or shaded ground, and often on the sandy beach. Islands and Ohio shore

Oenothera rhombipetala Nutt. (RHOMBIC EVENING PRIMROSE)

Ohio shore.

Gaura biennis L. (BIENNIAL GAURA.)

Along Detroit river and near Windsor. Ohio shore

Circaea lutetiana L. (ENCHANTER'S NIGHTSHADE)

Common at Point Pelee in rich open woods, and on Pelee island Put-in-Bay island.

Circaea alpina L. (SMALLER ENCHANTER'S NIGHTSHADE.)

Ohio shore.

HALORAGIDACEAE (WATER MILFOIL FAMILY)

Myriophyllum spicatum L. (SPIKED WATER MILFOIL)

Often abundant at Point Pelee in big ditches and stagnant pools, and on Pelee island

Proserpinaca palustris L. (MERMAID-WEED.)

Common at Point Pelee in and about the big marsh Ohio shore

ARALIACEAE (GINSENG FAMILY)

Aralia racemosa L. (SPIKENARD)

In rich woods near Colchester

Aralia nudicaulis L. (WILD SARSAPARILLA)

Common at Point Pelee in rich moist woods and thickets Green and Kelley islands and Ohio shore

Panax quinquefolium L. (GINSENG)

Reported as formerly plentiful at Point Pelee and on Pelee island, but not noticed in 1910-11 Formerly abundant on the other islands and Ohio shore

Panax trifolium L. (GROUND-NUT)

In rich woods about Windsor (F P Cravin)

UMBELLIFERAE (PARSLEY FAMILY)

Sanicula marilandica L. (BLACK SNAKEROOT)

Common at Point Pelee and on Pelee island. Put-in-Bay island and Ohio shore

Sanicula canadensis L. (SHORT-STYLED SNAKEROOT)

Along Detroit river. Kelley island and Ohio shore.

Erigenia bulbosa (Michx.) Nutt. (HARBINGER-OF-SPRING.)

Kelley island and Ohio shore.

Chaerophyllum procumbens (L.) Crantz. (SPREADING CHERVIL.)

White island in Detroit river (Macoun) Kelley island.

Osmorhiza Claytoni (Michx.) Clarke (WOOLLY SWEET CICELY)

Islands and Ohio shore

Osmorhiza longistylis (Torr) DC (SMOOTHER SWEET CICELY.)

Plentiful at Point Pelee in rich open or shaded ground.

Islands and Ohio shore

Conium maculatum L. (POISON HEMLOCK)

Noticed in waste places near Windsor

Cicuta maculata L (WATER HEMLOCK)

In damp open ground on Pelee island Kelley island and Ohio shore

Cicuta bulbifera L (BULB-BEARING WATER HEMLOCK.)

Common at Point Pelee in and about the big marsh.

Islands and Ohio shore

Carum Carvi L (CARAWAY)

Occasional at Point Pelee as a weed about dwellings.

Islands and Ohio shore.

Sium cicutaefolium Schrank (WATER PARSNIP.)

Common at Point Pelee in and about the big marsh and on Pelee island. Kelley island and Ohio shore.

Cryptotaenia canadensis (L) DC (HONEWORT)

Common at Point Pelee in damp rich woods and thickets, and on Pelee island. Ohio shore.

Zizia aurea (L) Koch. (GOLDEN ALEXANDERS.)

Occasional at Point Pelee and on Pelee island. Kelley island

Zizia cordata (Walt) DC (HEART-LEAVED ALEXANDERS.)

Frequent on Pelee island Occasional along Detroit river.

Taenidia integerrima (L.) Drude (YELLOW PIMPERNEL.)

Occasional at Point Pelee in dry open or slightly shaded ground and on Pelee island Kelley and Put-in-Bay islands and Ohio shore

Thaspium aureum Nutt. (MEADOW PARSNIP.)

Islands of Detroit river. (MacLagan.) Put-in-Bay island and Ohio shore.

Thaspium barbinode (Michx) Nutt (HAIRY-JOINTED MEADOW PARSNIP)

Pelee island. Near Colchester and along Detroit river. Islands of Lake Erie and Ohio shore.

Thaspium barbinode (Michx) Nutt, var **angustifolium**

Coult and Rose (HAIRY-JOINTED MEADOW PARSNIP)

Pelee island (Macoun) Johnson and Mouse islands and Ohio shore

Pastinaca sativa L (PARSNIP)

Near dwellings at Point Pelee as an escape from cultivation, and on Pelee island, Kelley island, and Ohio shore

Heracleum lanatum Michx (COW PARSNIP)

Ohio shore

Oxypolis rigidior (L) Coult and Rose (COWBANE)

Ohio shore

Daucus Carota L (CARROT)

Occasional at Point Pelee about dwellings, in old fields, and on Pelee island Ohio shore

CORNACEAE (DOGWOOD FAMILY)

Cornus canadensis L (DWARF CORNELL)

In damp shaded ground about Windsor (F P Cravin)

Cornus florida L (FLOWERING DOGWOOD)

Abundant on places along north shore of Lake Erie. Near Amherstburg (Macoun) Kelley island and Ohio shore

Cornus circinata L'Her (ROUND-LEAVED CORNELL)

Occasional at Point Pelee on borders of woods and abundant on Pelee island Hen and Kelley island and Ohio shore

Cornus Amomum Mill (SILKY CORNELL)

Common at Point Pelee in damp open or shaded ground. Islands and Ohio shore

Cornus asperifolia Michx. (ROUGH-LEAVED CORNEL.)

Common at Point Pelee in dry open or slightly shaded ground, and along north shore of Lake Erie. Islands and Ohio shore.

Cornus Baileyi Coult and Evans. (BAILEY'S CORNEL.)

Occasional at Point Pelee and along north shore of Lake Erie.

Cornus stolonifera Michx (RED-OSIER DOGWOOD.)

Along north shore of Lake Erie Ohio shore

Cornus paniculata L'Her. (PANICLED CORNEL)

Common at Point Pelee on borders of woods and thickets, and on Pelee island.

Cornus alternifolia L f (ALTERNATE-LEAVED CORNEL)

Frequent at Point Pelee in open woods and on Pelee island Ohio shore

Nyssa sylvatica Marsh. (BLACK GUM)

Between Essex Centre and Leamington (Macoun.)
Near Colchester

ERICACEAE (HEATH FAMILY)

Chimaphila umbellata (L) Nutt (PRINCE'S PINE)

Ohio shore

Pyrola elliptica Nutt (SHIN LEAF)

Ohio shore

Pyrola americana Sweet (ROUND-LEAVED WINTERGREEN.)

About Windsor (F P Cravin)

Monotropa uniflora L (INDIAN PIPE)

Frequent about Windsor (F P Cravin.) Ohio shore.

Gaultheria procumbens L (WINTERGREEN)

Common in dry woods about Windsor.

Arctostaphylos Uva-ursi (L) Spreng (BEARBERRY.)

On the west beach of Point Pelee acting as a sand binder.
Pelee island

Gaylussacia baccata (Wang) C. Koch (BLACK HUCKLE-BERRY)

Common in dry woods about Windsor

Vaccinium pennsylvanicum Lam (EARLY SWEET BLUEBERRY.)

Common about Windsor.

Vaccinium vacillans Kalm. (LATE LOW BLUEBERRY.)

Common in woods about Windsor.

Vaccinium corymbosum L. (SWAMP BLUEBERRY)

Common in swampy places about Windsor. (F. P. Cravin)

Vaccinium macrocarpon Ait. (LARGE CRANBERRY)

Reported as formerly abundant in parts of the big marsh at Point Pelee Destroyed by drainage and fire.

PRIMULACEAE (PRIMROSE FAMILY)

Lysimachia terrestris (L) BSP (BULB-BEARING LOOSESTRIFE)

Occasional at Point Pelee in damp open ground Bass island and Ohio shore

Lysimachia Nummularia L (MONEYWORT)

In damp places along north shore of Lake Erie Middle Bass island

Lysimachia thyrsoflora L (TUFTED LOOSESTRIFE)

Frequent at Point Pelee in wet open spots Ohio shore

Steironema ciliatum (L) Raf

Common at Point Pelee in rich woods and thickets. Islands and Ohio shore

Steironema quadriflorum (Sims) Hitchc. (PRAIRIE MONEYWORT.)

Islands of Detroit river and near Sandwich (MacLagan)

OLEACEAE (OLIVE FAMILY)

Fraxinus americana L (WHITE ASH)

Frequent at Point Pelee in rich ground with other trees. Islands and Ohio shore

Fraxinus pennsylvanica Marsh (RED ASH.)

Occasional at Point Pelee in rich ground with other trees. Islands and Ohio shore Along shore of Lake St Clair.

Fraxinus quadrangulata Michx. (BLUE ASH.)

In dry ground at Point Pelee with other trees along "the narrows." Abundant on Pelee island. On the other Lake Erie islands and Ohio shore.

Fraxinus nigra Marsh (BLACK ASH.)

Occasional at Point Pelee and usually small in wet woods with other trees Islands and Ohio shore.

Syringa vulgaris L (COMMON LILAC)

Noticed as an escape on Pelee island. Well established on Kelley island.

Ligustrum vulgare L (PRIVET)

Ohio shore.

GENTIANACEAE (GENTIAN FAMILY)

Gentiana crinita Froel (FRINGED GENTIAN)

Abundant in damp spots along Lake Erie shore. Ohio shore

Gentiana quinquefolia L (STIFF GENTIAN)

Along Detroit river (MacLagan)

Gentiana Andrewsii Griseb (CLOSED GENTIAN)

In damp spots along Lake Erie shore and Detroit river. Frequent about Windsor (F P Cravin) Ohio shore.

APOCYNACEAE (DOGBANE FAMILY.)

Vinca minor L (COMMON PERIWINKLE)

Kelley and Middle Bass islands and Ohio shore.

Apocynum androsaemifolium L (SPREADING DOGBANE)

Frequent at Point Pelee in dry open ground and on Pelee island Put-in-Bay and Middle Bass islands and Ohio shore

Apocynum cannabinum L (INDIAN HEMP)

Frequent at Point Pelee in damp gravelly ground. Islands and Ohio shore.

Apocynum cannabinum L, var. **pubescens** (R Br.) DC. (VELVET DOGBANE)

In blown up sand at Point Pelee. (Macoun.)

ASCLEPIADACEAE (MILKWEED FAMILY.)

Asclepias tuberosa L. (BUTTERFLY-WEED.)

Occasional at Point Pelee in dry open ground Put-in-Bay and North Bass islands and Ohio shore.

Asclepias purpurascens L. (PURPLE MILKWEED.)

Along Detroit river. (MacLagan) Ohio shore.

Asclepias incarnata L. (SWAMP MILKWEED)

Common at Point Pelee in damp open places. Islands and Ohio shore

Asclepias syriaca L. (COMMON MILKWEED)

Common at Point Pelee in dry open ground and old cultivated fields Islands and Ohio shore.

Asclepias phytolaccoides Pursh (POKE MILKWEED)

Common at Point Pelee Occasional at Pelee island Islands of Detroit river and on the mainland. (MacLagan) Put-in-Bay island and Ohio shore

Asclepias verticillata L. (WHORLED MILKWEED)

Ohio shore.

Acerates floridana (Lam.) Hitchc. (FLORIDA MILKWEED)

Along Detroit river (MacLagan) Near Sandwich. (Macoun)

Acerates viridiflora Ell. (GREEN MILKWEED)

Frequent at Point Pelee on and near the upper sandy beach Ohio shore

Acerates viridiflora Ell., var. **lanceolata** (Ives) Gray (GREEN MILKWEED)

Point Pelee (Macoun) Ohio shore

CONVOLVULACEAE (CONVOLVULUS FAMILY)

Ipomoea hederacea Jacq. (IVY-LEAVED MORNING GLORY.)

Noticed at Point Pelee as an escape in sandy ground.

Ipomoea purpurea (L.) Roth (COMMON MORNING GLORY.)

In sandy ground near dwellings at Point Pelee. Put-in-Bay and North Bass islands and Ohio shore

Ipomoea pandurata (L.) G.F.W. Mey. (WILD POTATO-VINE.)

Very abundant at Point Pelee in spots in dry ground, and white with flowers, August 20, 1910. Ohio shore.

Convolvulus sepium L. (HEDGE BINDWEED.)

Frequent at Point Pelee in damp open ground. Islands and Ohio shore.

Convolvulus sepium L., var. **pubescens** (Gray) Fernald.
(TRAILING BINDWEED)

Ohio shore.

Convolvulus arvensis L. (FIELD BINDWEED)

Near dwellings and in old fields at Point Pelee. Islands.

Cuscuta obtusiflora HBK (SMARTWEED DODDER)

Ohio shore

Cuscuta Cephalanthi Engelm (BUTTON-BUSH DODDER)

Put-in-Bay island.

Cuscuta indecora Choisy. (PRETTY DODDER)

Ohio shore

Cuscuta Gronovii Willd (LOVE-VINE)

Frequent at Point Pelee in open or shaded ground especially on edge of marsh along "the narrows" Common on the islands of Lake Erie

POLEMONIACEAE (POLEMONIUM FAMILY.)

Phlox pilosa L (DOWNY PHLOX)

Near Amherstburg in dry woods (Macoun) Along Detroit river (MacLagan) Ohio shore

Phlox divaricata L (BLUE PHLOX)

Common at Point Pelee in rich open woods Islands and Ohio shore

Phlox subulata L. (GROUND PINK)

Ohio shore

Polemonium reptans L (GREEK VALERIAN.)

Ohio shore

HYDROPHYLLACEAE (WATERLEAF FAMILY)

Hydrophyllum virginianum L. (VIRGINIA WATERLEAF.)

Islands of Lake Erie except Kelley and Put-in-Bay islands. Ohio shore.

Hydrophyllum appendiculatum Michx. (APPENDAGED WATERLEAF)

Common at Point Pelee in damp shaded ground. Along Detroit river. (MacLagan) Islands of Lake Erie.

Phacelia Purshii Buckley. (PURSH'S PHACELIA.)

Chicken, Johnson, and Kelley islands and Ohio shore.

BORAGINACEAE (BORAGE FAMILY)

Cynoglossum officinale L (COMMON HOUND'S TONGUE.)

Common at Point Pelee in open ground near dwellings, in cultivated fields and open woods Islands and Ohio shore.

Lappula virginiana (L) Greene (BEGGAR'S LICE)

Occasional at Point Pelee in rich shaded ground. Kelley and Put-in-Bay islands and Ohio shore

Lappula echinata Gilibert (EUROPEAN STICKSEED.)

Occasional at Point Pelee along the roads and on Pelee island Kelley and Middle Bass islands and Ohio shore

Myosotis virginica (L) BSP (EARLY SCORPION-GRASS)

Put-in-Bay island

Mertensia virginica (L) Link (BLUEBELLS)

Johnson, Kelley, and North Bass islands and Ohio shore

Lithospermum arvense L (CORN GROMWELL)

As a weed at Point Pelee about dwellings and in cultivated fields Islands and Ohio shore

Lithospermum Gmelini (Michx.) Hitchc (HAIRY PUCKCOON)

Frequent at Point Pelee in open sandy ground on and near the sandy upper beach and about Windsor. Islands and Ohio shore

Lithospermum canescens (Michx) Lehm HOARY PUCKCOON)

Along Detroit river (MacLagan) Ohio shore.

Lithospermum angustifolium Michx (NARROW-LEAVED PUCKCOON.)

Occasional at Point Pelee in open sandy ground.

Onosmodium hispidissimum Mackenzie (SHAGGY FALSE GROMWELL.)

Johnson islands and Ohio shore.

Echium vulgare L. (BLUE-WEED)

Common along railways (F P Cravin)

VERBENACEAE (VERVAIN FAMILY)

Verbena urticaefolia L. (WHITE VERVAIN)

In dryish open ground at Point Pelee, but apparently infrequent. Islands and Ohio shore.

Verbena angustifolia Michx (NARROW-LEAVED VERVAIN.)

Noticed as frequent on Pelee island Kelley island and Ohio shore

Verbena hastata L (BLUE VERVAIN)

Often very abundant at Point Pelee in damp open ground
Islands and Ohio shore

Lippia lanceolata Michx. (FOG-FRUIT)

Wet places near Leamington (Macoun.) Johnson and Put-in-Bay islands and Ohio shore

LABIATAE (MINT FAMILY.)

Teucrium canadense L. (COMMON GERMANDER)

Frequent at Point Pelee in damp open ground. Islands and Ohio shore.

Teucrium occidentale Gray (HAIRY GERMANDER)

Occasional at Point Pelee in the drier parts of the big marsh Ohio shore.

Isanthus brachiatus (L.) BSP. (FALSE PENNYROYAL.)

Kelley island and common on Ohio shore.

Scutellaria lateriflora L. (MAD-DOG SKULLCAP)

Common at Point Pelee in damp rich woods. Islands and Ohio shore

Scutellaria versicolor Nutt. (HEART-LEAVED SKULLCAP.)

Johnson and Put-in-Bay islands and Ohio shore.

Scutellaria galericulata L. (MARSH SKULLCAP) (HOODED WILLOW-HERB)

Common at Point Pelee in and about the big marsh and on Pelee island Put-in Bay and Middle Bass islands and Ohio shore.

Scutellaria parvula Michx (SMALL SKULLCAP.)

Abundant in spots on Pelee island in dry ground Kelley island and Ohio shore

Marrubium vulgare L (COMMON HOREHOUND)

Frequent at Point Pelee in dry ground near dwellings. Islands and Ohio shore

Agastache nepetoides (L) Ktze (CATNIP GIANT HYSSOP.)

Frequent at Point Pelee in shaded ground. Along Detroit river (MacLagan) Kelley and Johnston islands and Ohio shore

Nepeta Cataria L (CATNIP)

Common at Point Pelee near dwellings and in old fields. Islands and Ohio shore

Nepeta hederacea (L) Trevisan (GROUND IVY)

Common at Point Pelee and appearing like a native plant. Islands and Ohio shore.

Prunella vulgaris L (HEAL-ALL)

Common at Point Pelee in damp open ground. Islands and Ohio shore

Physostegia virginiana (L) Benth. (FALSE DRAGON HEAD.)

In damp sandy ground along Lake Erie shore Put-in-Bay and Middle Bass islands and Ohio shore

Lamium amplexicaule L (HENBIT)

Occasional at Point Pelee as a weed in gardens (Wallace Tilden) Islands and Ohio shore

Leonurus Cardiaca L (COMMON MOTHERWORT)

Common at Point Pelee about dwellings and in old cultivated fields Islands and Ohio shore

Stachys tenuifolia Willd, var **aspera** (Michx.) Fernald. (ROUGH HEDGE NETTLE)

Middle Bass and North Bass islands and Ohio shore.

Stachys palustris L. (WOUNDWORT.)

Frequent at Point Pelee in and about the big marsh,
and on Pelee island.

Monarda didyma L. (BEE BALM.)

Frequent about Windsor (F. P. Cravin)

Monarda fistulosa L. (WILD BERGAMOT)

At Point Pelee. (Macoun.) Islands and Ohio shore.

Monarda mollis L. (PALE WILD BERGAMOT.)

Frequent at Point Pelee in dry open or slightly shaded
ground Islands and Ohio shore

Blephilia ciliata (L.) Raf (DOWNY BLEPHILIA)

Plentiful on Pelee island in open or shaded ground.
Johnson, Kelley, and Put-in-Bay islands and Ohio shore.

Blephilia hirsuta (Pursh) Benth (WOOD MINT)

Ohio shore

Hedeoma pulegioides (L) Pers (AMERICAN PENNYROYAL.)

Along Detroit river (MacLagan) Islands and Ohio
shore

Melissa officinalis L. (COMMON BALM)

Put-in-Bay island

Satureja glabra (Nutt.) Fernald. (LOW CALAMINT)

Ohio shore.

Satureja hortensis L (SUMMER SAVORY)

Ohio shore

Satureja vulgaris (L.) Fritsch. (*Calamintha Clinopodium*
Benth) (FIELD BASIL)

Occasional at Point Pelee in dry open or slightly shaded
ground Islands and Ohio shore.

Pycnanthemum virginianum (L.) Durand and Jackson.
(VIRGINIAN MOUNTAIN MINT.)

Common at Point Pelee in the drier part of the big marsh.
Put-in-Bay island and Ohio shore

Pycnanthemum pilosum Nutt (HAIRY MOUNTAIN MINT.)

In dry shaded ground at Point Pelee, but apparently
infrequent Ohio shore

Lycopus virginicus L (PURPLE BUGLE WEED)

Frequent at Point Pelee in moist open places. Islands
and Ohio shore.

Lycopus uniflorus Michx. (COMMON BUGLE WEED.)

Frequent at Point Pelee in low moist ground.

Lycopus rubellus Moench (STALKED WATER HOREHOUND.)

In damp grassy places at Point Pelee Apparently infrequent Islands and Ohio shore

Lycopus americanus Muhl (CUT-LEAVED WATER HOREHOUND)

Common and often abundant at Point Pelee in damp open places, especially in and about the big marsh. Islands and Ohio shore

Mentha spicata L. (SPEARMINT)

Along roads on Pelee island Put-in-Bay island and Ohio shore

Mentha piperita L (PEPPERMINT)

Occasional at Point Pelee in damp places near dwellings and in damp sand on the beach

Mentha arvensis L , var **canadensis** (L) Briquet. (AMERICAN WILD MINT)

Frequent at Point Pelee in damp open or slightly shaded ground Common on the islands and Ohio shore

Collinsonia canadensis L (HORSE BALM)

Along Detroit river (MacLagan)

SOLANACEAE (NIGHTSHADE FAMILY)

Solanum Dulcamara L (NIGHTSHADE.)

Common at Point Pelee in damp open or shaded ground. Islands and Ohio shore.

Solanum nigrum L. (COMMON NIGHTSHADE)

Frequent at Point Pelee in rich open or shaded ground, and a weed in gardens Islands and Ohio shore.

Solanum carolinense L (HORSE NETTLE)

Ohio shore

Solanum rostratum Dunal (BUFFALO BUR)

Put-in-Bay island and Ohio shore

Physalis pruinosa L (STRAWBERRY TOMATO)

Kelley island

Physalis heterophylla Nees (CLAMMY GROUND CHERRY.)

Common at Point Pelee in open sandy ground. Islands and Ohio shore.

Physalis heterophylla Nees, var **ambigua** (Gray) Rydb
(CLAMMY GROUND CHERRY)

Ohio shore

Physalis heterophylla Nees, var **nyctaginea** (Dunal) Rydb
(CLAMMY GROUND CHERRY)

Ohio shore

Physalis subglabrata Mackenzie and Bush (GLABRATE
GROUND CHERRY)

Along Detroit river.

Physalis lanceolata Michx. (PRAIRIE GROUND CHERRY)

Kelley island and Ohio shore.

Lycopersican esculentum Mill (TOMATO)

Said to have escaped and become well established on Kelley and Put-in-Bay islands

Lycium halimifolium Mill (COMMON MATRIMONY VINE.)

Occasional at Point Pelee as an escape and on Pelee island Kelley island

Hyoscyamus niger L (BLACK HENBANE.)

Along Detroit river. (MacLagan)

Datura Stramonium L (STRAMONIUM.)

Ohio shore.

Datura Tatula L (PURPLE STRAMONIUM.)

Occasional at Point Pelee as a weed about dwellings and in waste places

SCROPHULARIACEAE (FIGWORT FAMILY.)

Verbascum Thapsus L (COMMON MULLEIN)

Frequent at Point Pelee as a weed in cultivated grounds.

Verbascum Blattaria L. (Moth Mullein)

Frequent along roads on Pelee island Along Detroit river and near Windsor

Verbascum Lychnitis L (WHITE MULLEIN)

Roadside near Sandwich (Macoun)

Linaria vulgaris Hill. (BUTTER AND EGGS)

Frequent at Point Pelee about dwellings as a weed.
Islands and Ohio shore

Scrophularia leporella Bicknell (HARE FIGWORT.)

Frequent at Point Pelee on borders of the big marsh.
Islands and Ohio shore.

Pentstemon hirsutus (L.) Willd (HAIRY BEARD-TONGUE.)

Frequent at Point Pelee in dry open or slightly shaded
ground Islands and Ohio shore

Chelone glabra L (TURTLEHEAD)

Frequent in damp ground along Lake Erie shore.

Mimulus ringens L (SQUARE-STEMMED MONKEY FLOWER)

In ditches and damp places about the big marsh at Point
Pelee and on Pelee island Bass island and Ohio shore.

Conobea multifida (Michx) Benth. (CONOBEA)

On the extreme southern point of Pelee island. (Macoun.)
Kelley island and Ohio shore

Ilysanthes dubia (L) Barnhart (LONG-STALKED FALSE
PIMPERNEL)

In damp sandy ground along Lake Erie shore. Ohio
shore

Veronica virginica L (CULVER'S-ROOT)

Islands of Detroit river (MacLagan) Ohio shore

Veronica Anagallis-aquatica L (WATER SPEEDWELL)

Kelley island

Veronica officinalis L (COMMON SPEEDWELL.)

Ohio shore.

Veronica serpyllifolia L. (THYME-LEAVED SPEEDWELL.)

Frequent at Point Pelee in open grassy places and on
Pelee island. Put-in-Bay island.

Veronica peregrina L (NECKWEED)

Occasional at Point Pelee as a weed in gardens and old
fields and on Pelee island. Put-in-Bay, North Bass,
and Rattlesnake islands and Ohio shore

Veronica arvensis L (CORN SPEEDWELL)

In open grassy places at Point Pelee Common on the
islands and Ohio shore

Seymeria macrophylla Nutt. (MULLEIN FOXGLOVE.)

Ohio shore.

Gerardia pedicularia L. (FERN-LEAVED FOXGLOVE.)

In dry open ground about Windsor. (F. P. Cravin.)

Gerardia virginica (L.) BSP. (SMOOTH FALSE FOXGLOVE.)

Along Detroit river. (MacLagan) Ohio shore.

Gerardia auriculata Michx. (AURICLED GERARDIA.)

Ohio shore.

Gerardia purpurea L. (PURPLE GERARDIA.)

About Windsor (F. P. Cravin.) Ohio shore.

Gerardia paupercula (Gray) Britton. (SMALL-FLOWERED GERARDIA.)

Frequent at Point Pelee about the big marsh, and on Pelee island.

Gerardia tenuifolia Vahl. (SLENDER GERARDIA.)

In damp places along Lake Erie shore Along Detroit river. (MacLagan) Kelley island and Ohio shore.

Castilleja coccinea (L.) Spreng. (SCARLET PAINTED CUP.)

Common about Windsor (F. P. Cravin.) Ohio shore.

Pedicularis canadensis L. (COMMON LOUSEWORT.)

Frequent at Point Pelee in shaded ground, and on Pelee island. Kelley and Put-in-Bay islands and Ohio shore.

Pedicularis lanceolata Michx (SWAMP LOUSEWORT.)

In damp open places along Lake Erie shore. Along Detroit river (MacLagan)

LENTIBULARIACEAE (BLADDERWORT FAMILY.)

Utricularia vulgaris L., var **americana** Gray. (GREATER BLADDERWORT.)

Common in shallow water about Windsor. (F. P. Cravin.) Ohio shore.

Utricularia gibba L. (HUMPED BLADDERWORT)

Ohio shore.

OROBANCHACEAE (BROOM-RAPE FAMILY.)

Conopholis americana (L. f.) Wallr. (SQUAW-ROOT.)

Put-in-Bay island.

Orobanche uniflora L. (ONE-FLOWERED CANCER-ROOT.)

Ohio shore.

BIGNONIACEAE (BIGNONIA FAMILY)

Tecoma radicans (L.) Juss. (TRUMPET CREEPER.)

Common on Pelee island. The other Lake Erie islands, and Ohio shore.

Catalpa speciosa Warder. (CATAWBA TREE.)

Often planted and apparently spreading near Kingsville.

Catalpa bignonioides Walt. (CATALPA.)

Planted and escaping along Lake Erie shore.

ACANTHACEAE (ACANTHUS FAMILY.)

Dianthera americana L. (DENSE-FLOWERED WATER WILLOW.)

Put-in-Bay and Middle Bass islands and Ohio shore.

PHRYMACEAE (LOPSEED FAMILY.)

Phryma leptostachya L. (LOPSEED.)

Frequent at Point Pelee in rich woods and thickets.

Kelley and Put-in-Bay islands and Ohio shore.

PLANTAGINACEAE (PLANTAIN FAMILY.)

Plantago cordata Lam. (HART-LEAVED PLANTAIN.)

Along Detroit river. (MacLagan.) Near Amherstburg. (Macoun)

Plantago major L. (COMMON PLANTAIN.)

Frequent at Point Pelee about dwellings and in waste places. Islands and Ohio shore.

Plantago Rugelii Dene. (RUGEL'S PLANTAIN.)

'n fields and pastures at Point Pelee. Islands and Ohio shore.

Plantago lanceolata L. (ENGLISH PLANTAIN.)

Occasional at Point Pelee as a weed along roads and in cultivated grounds and on Pelee island.

Plantago aristata Michx. (LARGE-BRACTED PLANTAIN.)

Roadsides near Windsor. (Macoun)

RUBIACEAE (MADDER FAMILY.)

Galium Aparine L. (CLEAVERS.)

Common at Point Pelee in rich shaded ground. Islands and Ohio shore.

Galium pilosum Ait. (HAIRY BEDSTRAW.)

Point Pelee. (Macoun) Along Detroit river and Ohio shore.

Galium circaezans. Michx. (WILD LIQUORICE.)

Occasional at Point Pelee in dry shaded ground, and on Pelee island. Put-in-Bay, Middle Bass, and Rattlesnake islands, and Ohio shore

Galium lanceolatum Torr. (WILD LIQUORICE)

In dry woods about Windsor. (F. P. Cravin.)

Galium boreale L. (NORTHERN BEDSTRAW.)

Frequent on Pelee island. Kelley island and Ohio shore.

Galium trifidum L. (SMALL BEDSTRAW)

Common at Point Pelee on the borders of the big marsh, especially along "the narrows," and on Pelee island. Put-in-Bay and Middle Bass islands and Ohio shore.

Galium tinctorium L. (STIFF MARSH BEDSTRAW.)

Frequent in damp open places at Point Pelee, and on Pelee island. Ohio shore.

Galium concinnum T. and G. (SHINING BEDSTRAW.)

Ohio shore.

Galium asprellum Michx. (ROUGH BEDSTRAW.)

Occasional at Point Pelee in wet bushy places. Islands and Ohio shore.

Galium triflorum Michx. (SWEET-SCENTED BEDSTRAW.)

Common at Point Pelee in rich shaded ground, and on Pelee island. Rattlesnake island

Cephalanthus occidentalis L. (BUTTONBUSH)

Abundant at Point Pelee on borders of the big marsh, especially along "the narrows." Islands and Ohio shore.

Houstonia longifolia Gaertn (SLENDER-LEAVED HOUSTONIA.)

Rattlesnake and Put-in-Bay islands and Ohio shore.

Houstonia ciliolata Torr (FRINGED HOUSTONIA.)

Common on the Ohio shore

CAPRIFOLIACEAE (HONEYSUCKLE FAMILY.)

Diervilla Lonicera Mill (BUSH HONEYSUCKLE.)

In dry ground about Windsor (F. P. Cravin.)

Lonicera glaucescens Rydb (DOUGLAS HONEYSUCKLE.)

Frequent at Point Pelee in dry open or shaded ground. Islands and Ohio shore

Symphoricarpos racemosus Michx (SNOWBERRY)

Abundant at Point Pelee in dry shaded ground. Islands and Ohio shore

Symphoricarpos racemosus Michx, var **pauciflorus** Robbins (LOW SNOWBERRY)

Islands and Ohio shore

Triosteum perfoliatum L (TINKER'S WEED.)

About Windsor (F P Cravin)

Viburnum acerifolium L (DOCKMACKIE.)

Occasional at Point Pelee in dry open or shaded ground. Put-in-Bay island

Viburnum pubescens (Ait.) Pursh. (DOWNY ARROW-WOOD.)

Occasional at Point Pelee in thickets, and on Pelee island. Kelley and Put-in-Bay islands and Ohio shore.

Viburnum dentatum L. (ARROW-WOOD)

"In thickets" at Point Pelee. (Macoun.) Not noticed in 1910-11.

Vernonia illinoensis Gleason. (ILLINOIS IRONWEED.)

Frequent at Point Pelee in damp open ground. On flat open ground about Lake St. Clair. Kelley island.

Eupatorium purpureum L. (JOE-PYE WEED.)

Ohio shore.

Eupatorium purpureum L., var. **maculatum** (L.) Darl.

Ohio shore.

Eupatorium altissimum L. (TALL THOROUGHWORT.)

Johnson island and Ohio shore.

Eupatorium sessilifolium L. (UPLAND BONESET.)

Ohio shore.

Eupatorium perfoliatum L. (BONESET)

Common at Point Pelee in damp open ground. Islands and Ohio shore.

Eupatorium urticaefolium Reichard (*E. ageratoides* L.f.)
(WHITE SNAKEROOT)

Rattlesnake island and Ohio shore

Liatris scariosa Willd. (LARGE BUTTON SNAKEROOT.)

Near Leamington and along Detroit river. (Burgess.)
Ohio shore

Liatris spicata (L.) Willd. (DENSE BUTTON SNAKEROOT.)

Ohio shore.

Solidago caesia L. (BLUE-STEMMED GOLDENROD.)

Abundant in spots along the Lake Erie shore. Islands and Ohio shore

Solidago latifolia L. (ZIGZAG GOLDENROD)

Kelley, Green, and Rattlesnake islands, and Ohio shore.

Solidago hispida Muhl. (HAIRY GOLDENROD)

Frequent at Point Pelee in dry open or slightly shaded ground. Islands and Ohio shore.

Solidago speciosa Nutt. (SHOWY GOLDENROD)

Ohio shore.

Solidago patula Muhl. (ROUGH-LEAVED GOLDENROD.)

Kelley island.

Solidago juncea Ait. (EARLY GOLDENROD.)

Occasional at Point Pelee in dry open ground, and on Pelee island. Ohio shore.

Solidago juncea Ait., var. **scabrella** (T. and G.) Gray.
(EARLY GOLDENROD.)

Near Leamington. (Macoun.)

Solidago ulmifolia Muhl. (ELM-LEAVED GOLDENROD.)

Islands and Ohio shore

Solidago rugosa Mill. (WRINKLE-LEAVED GOLDENROD.)

In dry open ground near Windsor.

Solidago nemoralis Ait. (FIELD GOLDENROD.)

Frequent at Point Pelee in dry open ground. Islands
and Ohio shore.

Solidago canadensis L. (CANADA GOLDENROD.)

Common at Point Pelee in damp open ground. Islands
and Ohio shore

Solidago altissima L. (TALL GOLDENROD)

Common at Point Pelee in damp open ground on borders
of woods and thickets

Solidago serotina Ait. (LATE GOLDENROD.)

Frequent at Point Pelee in thickets and borders of rich
woods Along Detroit river and Ohio shore

Solidago rigida L. (STIFF GOLDENROD)

On the islands of Detroit river. Middle Bass island
and Ohio shore.

Solidago Riddellii Frank (RIDDELL'S GOLDENROD.)

Ohio shore

Solidago graminifolia (L.) Salisb. (BUSHY GOLDENROD.)

Common at Point Pelee and often abundant in damp
open ground Islands and Ohio shore

Boltonia asteroides (L.) L'Her. (ASTER-LIKE BOLTONIA.)

Johnson and Put-in-Bay islands and Ohio shore.

Aster divaricatus L. (WHITE WOOD ASTER)

Frequent about Windsor. (F. P. Cravin.)

Aster macrophyllus L. (LARGE-LEAVED ASTER.)

Occasional at Point Pelee in dry shaded ground. Put-in-
Bay island.

Aster oblongifolius Nutt. (AROMATIC ASTER.)

About Windsor. (F. P. Cravin.)

Aster novae-angliae L. (NEW ENGLAND ASTER.)

Occasional at Point Pelee in dryish open ground and on Pelee island Common about Windsor. (F. P. Cravin.)
Kelley and Put-in-Bay islands.

Aster azureus Lindl. (SKY-BLUE ASTER.)

Occasional at Point Pelee in dry open or slightly shaded ground. Common about Windsor (F. P. Cravin.)
Ohio shore.

Aster Shortii Lindl. (SHORT'S ASTER.)

Occasional at Point Pelee in dry ground. Islands and Ohio shore.

Aster undulatus L. (WAVY-LEAF ASTER)

Near Sandwich (MacLagan.) Near Windsor. (Macoun.)

Aster Lowrieanus Porter, var , **lanceolatus** Porter. (LOWRIE'S ASTER)

In open woods along Lake Erie shore

Aster sagittifolius Wedemeyer. (ARROW-LEAVED ASTER.)

Common along Lake Erie shore in open or slightly shaded ground About Windsor (F P Cravin) Common on the islands and Ohio shore

Aster laevis L (SMOOTH ASTER)

Occasional at Point Pelee in dry open or slightly shaded ground Common about Windsor (F P Cravin.)
Ohio shore.

Aster polyphyllus Willd (FAXON'S ASTER)

Put-in-Bay island and Ohio shore

Aster ericoides L (WHITE HEATH ASTER.)

Occasional at Point Pelee in dry open ground. In sandy thickets near Windsor (J. M. Macoun.) Hen island and Ohio shore

Aster amethystinus Nutt (AMETHYST ASTER)

About Windsor. (F P. Cravin.)

Aster multiflorus Ait (DENSE-FLOWERED ASTER.)

In dry open ground along Lake Erie shore Common near Windsor Put-in-Bay island

Aster dumosus L. (BUSHY ASTER.)

About Windsor. (F. P Cravin)

- Aster vimineus** Lam. (SMALL WHITE ASTER.)
About Windsor. (F. P. Cravin.)
- Aster lateriflorus** (L.) Britton. (CALICO ASTER.)
Common along Lake Erie shore and about Windsor.
- Aster Tradescanti** L. (TRADESCANT'S ASTER.)
Common at Point Pelee in and about the big marsh and
in other wet places. Pelee island and Kelley island.
- Aster paniculatus** Lam. (PANICLED ASTER.)
Common on the islands and Ohio shore.
- Aster salicifolius** Ait. (WILLOW ASTER.)
Ohio shore.
- Aster junceus** Ait. (RUSH ASTER)
Abundant at Point Pelee in the big marsh.
- Aster puniceus** L (RED-STALK ASTER.)
Frequent at Point Pelee in swampy open places and along
the Lake Erie shore.
- Erigeron pulchellus** Michx. (ROBIN'S PLANTAIN.)
Common about Windsor.
- Erigeron philadelphicus** L. (PHILADELPHIA FLEABANE)
Occasional at Point Pelee in open places and fields.
Islands
- Erigeron annuus** (L) Pers (SWEET SCABIOUS)
Occasional at Point Pelee in rich open woods. Islands
and Ohio shore.
- Erigeron ramosus** (Walt) BSP. (DAISY FLEABANE)
Occasional at Point Pelee in dry open ground. Islands
and Ohio shore
- Erigeron canadensis** L. (HORSE-WEED)
A weed at Point Pelee near dwellings, in gardens and
fields Islands and Ohio shore
- Antennaria plantaginifolia** (L.) Richards. (PLANTAIN-
LEAVED EVERLASTING)
Common on Kelley and Put-in-Bay islands and Ohio
shore.
- Antennaria neglecta** Greene (FIELD CAT'S-FOOT.)
Ohio shore.

Gnaphalium polycephalum Michx. (COMMON EVERLASTING.)

Frequent at Point Pelee in dry open ground. Islands and Ohio shore.

Gnaphalium decurrens Ives. (EVERLASTING.)

Ohio shore.

Gnaphalium uliginosum L. (LOW CUDWEED.)

Ohio shore.

Inula Helenium L. (ELECAMPANE)

Along roads and in fields in Essex county. Ohio shore.

Polymnia canadensis L. (SMALL-FLOWERED LEAFCUP.)

Abundant along south shore of Pelee island Islands and Ohio shore.

Silphium terebinthinaceum Jacq. (PRAIRIE DOCK)

Near Amherstburg, and generally along Detroit river. Ohio shore.

Silphium trifoliatum L. (WHORLED ROSIN-WEED)

Near Amherstburg

Silphium perfoliatum L (CUP PLANT)

Islands in Detroit river (MacLagan) Margins of fields near Windsor (Macoun)

Ambrosia trifida L (GREAT RAGWEED)

Occasional at Point Pelee as a weed in cultivated fields.

Abundant on Pelee island. Common on the other islands and Ohio shore.

Ambrosia trifida L, var. **integrifolia** (Muhl.) T. and G.

Usually growing with the preceding

Ambrosia artemisiifolia L (COMMON RAGWEED)

Common on Point Pelee as a weed in gardens and fields.

Islands and Ohio shore

Xanthium canadense Mill (AMERICAN COCKLEBUR.)

Occasional at Point Pelee in damp open ground. Islands and Ohio shore

Xanthium commune Britton (COMMON CLOTBUR)

Ohio shore.

Xanthium echinatum Murr. (BEACH COCKLEBUR)

Occasional at Point Pelee in sand on or near the beach, and on Pelee island.

Heliothis helianthoides (L.) Sweet. (OX-EYE.)

Occasional at Point Pelee in damp open ground. Islands and Ohio shore.

Eclipta alba (L.) Hassk. (ECLIPTA)

Ohio shore

Rudbeckia triloba L (THIN-LEAVED CONE-FLOWER.)

Ohio shore

Rudbeckia hirta L (YELLOW DAISY)

Frequent in open ground along Lake Erie shore. Islands.

Rudbeckia laciniata L (TALL CONE-FLOWER.)

Along Detroit river Ohio shore

Lepachys pinnata (Vent) T. and G. (GRAY-HEADED CONE-FLOWER)

Near Amherstburg Ohio shore

Helianthus annuus L. (COMMON SUNFLOWER.)

Ohio shore

Helianthus giganteus L (TALL SUNFLOWER.)

Infrequent at Point Pelee, but common along Lake Erie shore Islands and Ohio shore

Helianthus divaricatus L (WOODLAND SUNFLOWER)

In dry shaded ground along Lake Erie shore Islands and Ohio shore

Helianthus hirsutus Raf (STIFF-HAIRED SUNFLOWER)

Ohio shore

Helianthus strumosus L. (PALE-LEAVED WOOD SUNFLOWER.)

Occasional at Point Pelee in open woods and thickets. Ohio shore

Helianthus strumosus L., var. **mollis** T. and G (PALE-LEAVED WOOD SUNFLOWER)

Ohio shore

Helianthus trachelifolius Mill (THROATWORT SUNFLOWER.)

Ohio shore

Helianthus decapetalus L (THIN-LEAVED SUNFLOWER.)

Ohio shore.

Helianthus tuberosus L (JERUSALEM ARTICHOKE)

An occasional escape at Point Pelee Apparently native along Lake Erie shore. Kelley and Put-in-Bay islands and Ohio shore

Actinomeris alternifolia (L.) DC. (ACTINOMERIS.)

Ohio shore.

Coreopsis tripteris L. (TALL COREOPSIS.)

Islands in Detroit river Islands and Ohio shore.

Bidens discoidea (T. and G.) Britton.

Along Detroit river (MacLagan) Ohio shore.

Bidens frondosa L. (BEGGAR-TICKS.)

Common at Point Pelee in damp open ground. Islands and Ohio shore

Bidens comosa (Gray) Wiegand. (LEAFY-BRACTED TICK-SEED)

Frequent at Point Pelee in wet places in and about the big marsh Ohio shore

Bidens connata Muhl (SWAMP BEGGAR-TICKS)

Common at Point Pelee in ditches and damp places about the big marsh Ohio shore.

Bidens cernua L. (STICK-TIGHT)

Common at Point Pelee in and about the big marsh, and on Pelee island

Bidens laevis (L.) BSP (LARGER BUR-MARIGOLD)

Common at Point Pelee in and about the big marsh. Along Lake Erie shore. Islands and Ohio shore.

Bidens bipinnata L. (SPANISH NEEDLES.)

North Bass island and Ohio shore

Bidens trichosperma (Michx) Britton, var. **tenuiloba** (Gray.) Britton (TALL TICKSEED SUNFLOWER)

Frequent at Point Pelee and in spots abundant in and about the big marsh Islands in Detroit river. Pelee island and Kelley island

Bidens aristosa (Michx) Britton (WESTERN TICKSEED SUNFLOWER)

Ohio shore.

Bidens Beckii Torr. (WATER MARIGOLD)

In very wet places along Detroit river. (MacLagan.) Ohio shore.

Actinea herbacea (Greene) Robinson. (STEMLESS PICRADENIA.)

Ohio shore.

Helenium autumnale L. (SWAMP SUNFLOWER.)

Occasional in damp places along Lake Erie shore. Ohio shore.

Achillea Millefolium L. (COMMON YARROW.)

Common at Point Pelee in open ground. Islands and Ohio shore.

Anthemis Cotula L. (MAY-WEED.)

Frequent at Point Pelee about dwellings as a weed. Islands and Ohio shore

Chrysanthemum Leucanthemum L , var **pinnatifidum**

Lecoq and Lamotte (OX-EYE DAISY)

Infrequent at Point Pelee Put-in-Bay island and Ohio shore

Chrysanthemum Parthenium (L) Bernh. (FEVERFEW.)

Well established on Put-in-Bay island

Chrysanthemum Balsamita L , var. **tanacetoides** Boiss.

(COSTMARY)

Pelee island and Ohio shore

Tanacetum vulgare L. (COMMON TANSY)

Established near dwellings at Point Pelee and on Pelee island Kelley island

Tanacetum vulgare L , var. **crispum** DC (TANSY.)

Islands in Lake Erie

Artemisia caudata Michx (TALL WORMWOOD)

Frequent at Point Pelee on the sandy beach. Islands and Ohio shore

Artemisia biennis Willd (BIENNIAL WORMWOOD.)

Occasional at Point Pelee as a weed in damp ground. Johnson, Middle Bass, and North Bass islands, and Ohio shore

Calendula officinalis L (POT MARIGOLD)

Becoming naturalized on Put-in-Bay island.

Erechtites hieracifolia (L) Raf (FIREWEED.)

Frequent at Point Pelee bordering the big marsh. Islands and Ohio shore

Senecio aureus L. (GOLDEN RAGWORT.)

Frequent about Windsor (F. P. Cravin.)

Senecio Balsamitae Muhl. (BALSAM GROUNDSEL.)

Occasional at Point Pelee in dry open or slightly shaded ground and on Pelee island. Put-in-Bay island.

Senecio obovatus Muhl. (ROUND-LEAF SQUAW-WEED.)

Kelley island

Arctium minus Bernh. (COMMON BURDOCK.)

Common at Point Pelee as a weed. Islands and Ohio shore

Cirsium lanceolatum (L.) Hill. (COMMON THISTLE.)

Occasional at Point Pelee about dwellings and in old fields. Islands and Ohio shore.

Cirsium discolor (Muhl.) Spreng. (FIELD THISTLE.)

Ohio shore.

Cirsium altissimum (L.) Spreng. (TALL THISTLE.)

Kelley island and Ohio shore.

Cirsium muticum Michx. (SWAMP THISTLE)

Occasional at Point Pelee in wet open or slightly shaded places, and along Lake Erie shore

Cirsium arvense (L.) Scop (CANADA THISTLE)

Frequent at Point Pelee in fields and pastures. Islands and Ohio shore

Centaurea Cyanus L. (BLUEBOTTLE)

Kelley island

Cichorium Intybus L (CHICORY.)

Occasional at Point Pelee in old fields, and on Pelee island.

Kelley and Middle Bass islands and Ohio shore.

Krigia amplexicaulis Nutt. (CYNTHIA)

Occasional on Pelee island On islands of Detroit river. (MacLagan) Kelley island and Ohio shore

Tragopogon porrifolius L. (SALSIFY.)

Pelee island and on the other islands

Tragopogon pratensis L (GOAT'S BEARD)

In towns and along railways

Taraxacum officinale Weber. (COMMON DANDELION.)

Abundant at Point Pelee as a weed in yards, pastures, and cultivated fields. Islands and Ohio shore.

Taraxacum erythrospermum Andr. (RED-SEEDED DANDELION.)

Ohio shore.

Sonchus asper L. Hill. (SPINY-LEAVED SOW THISTLE.)

A weed at Point Pelee in gardens and waste places.
Islands and Ohio shore.

Lactuca scariola L. (PRICKLY LETTUCE)

Frequent at Point Pelee on banks of ditches. Islands
and Ohio shore

Lactuca scariola L., var **integrata** Gren and Godr. (PRICKLY LETTUCE)

Common at Point Pelee on banks of ditches and in waste
places Islands and Ohio shore.

Lactuca canadensis L (WILD LETTUCE)

Occasional at Point Pelee in rich open or shaded ground.
Islands and Ohio shore

Lactuca canadensis L., var **montana** Britton (WILD LETTUCE)

Occasional at Point Pelee in open woods

Lactuca hirsuta Muhl (HAIRY WOOD-LETTUCE)

In thickets near Leamington (Macoun)

Lactuca villosa Jacq (HAIRY-VEINED BLUE LETTUCE)

Ohio shore

Lactuca floridana (L.) Gaertn (FLORIDA LETTUCE)

Islands of Detroit river (MacLagan) Put-in-Bay and
Green islands

Lactuca spicata (Lam.) Hitchc (TALL BLUE LETTUCE.)

Frequent at Point Pelee on shaded borders of the big
marsh, especially along "the narrows," and on Pelee
island Kelley and Put-in-Bay islands and Ohio shore.

Prenanthes racemosa Michx (GLAUOUS WHITE LETTUCE.)

Along Detroit river (MacLagan)

Prenanthes racemosa Michx, var. **pinnatifida** Gray. (GLAU-
COUS WHITE LETTUCE)

Near Windsor (Wm Scott)

Prenanthes alba L (WHITE LETTUCE)

Occasional at Point Pelee in rich open or shaded ground,
and along Lake Erie shore. Islands and Ohio shore.

Prenanthes altissima L (TALL WHITE LETTUCE.)

Put-in-Bay islands and Ohio shore

Hieracium venosum L (RATTLESNAKE-WEED)

Along Detroit river (MacLagan)

Hieracium scabrum Michx (ROUGH HAWKWEED.)

Ohio shore

Hieracium Gronovii L (GRONOVIIUS' HAWKWEED)

Near Sandwich (MacLagan)

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Ohio shore

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Memoirs and Reports Published During 1910.

REPORTS

Report on a geological reconnaissance of the region traversed by the National Transcontinental railway between Lake Nipigon and Clay lake, Ont.—by W. H. Collins No. 1059

Report on the geological position and characteristics of the oil-shale deposits of Canada—by R. W. Ellis No. 1107

A reconnaissance across the Mackenzie mountains on the Pelly, Ross, and Gravel rivers, Yukon and North West Territories—by Joseph Keele No. 1097
Summary Report for the calendar year, 1909 No. 1120

MEMOIRS—GEOLOGICAL SERIES

MEMOIR 1 No. 1, *Geological Series*—Geology of the Nipigon basin, Ontario—by Alfred W. G. Wilson

MEMOIR 2 No. 2, *Geological Series*—Geology and ore deposits of Hedley Mining district, British Columbia—by Charles Camsell

MEMOIR 3 No. 3, *Geological Series*—Palaeoscol fishes from the Albert shales of New Brunswick—by Lawrence M. Lambe

MEMOIR 5 No. 4, *Geological Series*—Preliminary memoir on the Lewis and Nordenskiöld Rivers coal district, Yukon Territory—by D. D. Cairnes

MEMOIR 6 No. 5, *Geological Series*—Geology of the Haliburton and Bancroft areas, Province of Ontario—by Frank D. Adams and Alfred E. Barlow

MEMOIR 7 No. 6, *Geological Series*—Geology of St. Bruno mountain Province of Quebec—by John A. Dresser

MEMOIRS—TOPOGRAPHICAL SERIES

MEMOIR 11 No. 1, *Topographical Series*—Triangulation and spirit levelling of Vancouver island, B.C. 1909—by R. H. Chipman

Memoirs and Reports Published During 1911.

REPORTS

Report on a traverse through the southern part of the North West Territories from Lac Seul to Cat lake, in 1902—by Alfred W. G. Wilson No. 1006

Report on a part of the North West Territories drained by the Wmisk and Upper Attawapiskat rivers—by W. McInnes No. 1080

Report on the geology of an area adjoining the east side of Lake Timiskaming—by Morley L. Wilson No. 1064

Summary Report for the calendar year 1910 No. 1170

MEMOIRS—GEOLOGICAL SERIES

- MEMOIR 4 *No 7, Geological Series* Geological reconnaissance along the line of the National Transcontinental railway in western Quebec—by W J Wilson
- MEMOIR *No 8, Geological Series* The Edmonton coal field, Alberta—by D B Dowling
- MEMOIR 9 *No 9, Geological Series* Bighorn coal basin, Alberta—by G S Malloch
- MEMOIR 10 *No 10, Geological Series* An instrumental survey of the shore-lines of the extinct lakes Algonquin and Nipissing in south-western Ontario—by J W Goldthwait
- MEMOIR 12 *No 11, Geological Series* Insects from the Tertiary lake deposits of the southern interior of British Columbia, collected by Mr Lawrence M Lambe, in 1906—by Anton Handlirsch
- MEMOIR 15 *No 12, Geological Series* On a Trenton Echinoderm fauna at Kirkfield, Ontario—by Frank Springer
- MEMOIR 16 *No 13, Geological Series* The clay and shale deposits of Nova Scotia and portions of New Brunswick—by Heinrich Ries, assisted by Joseph Keele

MEMOIRS—BIOLOGICAL SERIES

- MEMOIR 14 *No 1, Biological Series* New species of shells collected by Mr John Macoun at Barkley sound, Vancouver island, British Columbia—by William H Dall and Paul Bartsch

Memoirs and Reports Published During 1912.

REPORTS

Summary Report for the calendar year 1911 No 1218

MEMOIRS—GEOLOGICAL SERIES

- MEMOIR 13 *No 11, Geological Series* Southern Vancouver island—by Charles H Clapp
- MEMOIR 21 *No 15, Geological Series* The geology and ore deposits of Phoenix, Boundary district, British Columbia—by O E LeRoy
- MEMOIR 24 *No 16, Geological Series* Preliminary report on the clay and shale deposits of the western provinces—by Heinrich Ries and Joseph Keele
- MEMOIR 27 *No 17, Geological Series* Report of the Commission appointed to investigate Turtle mountain, Frank, Alberta, 1911
- MEMOIR 28 *No 18, Geological Series* The geology of Steeprock lake, Ontario—by Andrew C Lawson Notes on fossils from limestone of Steeprock lake, Ontario—by Charles D Walcott

Memoirs and Reports Published During 1913.

REPORTS, ETC

Museum Bulletin No 1 Contains articles Nos 1 to 12 of the Geological Series of Museum Bulletins, articles Nos 1 to 3 of the Biological Series of Museum Bulletins, and article No 1 of the Anthropological Series of Museum Bulletins

Guide Book No 1 Excursions in eastern Quebec and the Maritime Provinces, parts 1 and 2

Guide Book No 2 Excursions in the eastern Townships of Quebec and the eastern part of Ontario

Guide Book No 3 Excursions in the neighbourhood of Montreal and Ottawa

Guide Book No 4 Excursions in southwestern Ontario

Guide Book No 5 Excursions in the western peninsula of Ontario and Manitoulin island

Guide Book No 8 Toronto to Victoria and return via Canadian Pacific and Canadian Northern railways, parts 1, 2, and 3

Guide Book No 9 Toronto to Victoria and return via Canadian Pacific, Grand Trunk Pacific, and National Transcontinental railways

Guide Book No 10 Excursions in northern British Columbia and Yukon Territory and along the North Pacific coast

MEMOIRS—GEOLOGICAL SERIES

MEMOIR 17 *No 28, Geological Series* Geology and economic resources of the Larder Lake district, Ont., and adjoining portions of Pontiac county, Que.—by Morley L. Wilson

MEMOIR 18 *No 10 Geological Series* Bathurst district, New Brunswick—by G. A. Young

MEMOIR 26 *No 34, Geological Series* Geology and mineral deposits of the Fulameen district, B.C.—by C. Cammell

MEMOIR 29 *No 32, Geological Series* Oil and gas prospects of the northwest provinces of Canada—by W. Malcolm

MEMOIR 31 *No 20, Geological Series* Wheaton district, Yukon territory—by D. D. Cairnes

MEMOIR 33 *No 30, Geological Series* The geology of Gowganda Mining division—by W. H. Collins

MEMOIR 35 *No 29, Geological Series* Reconnaissance along the National Transcontinental railway in southern Quebec—by John A. Dresser

MEMOIR 37 *No 22, Geological Series* Portions of Athol district, B.C.—by D. D. Cairnes

MEMOIR 38 *No 31, Geological Series* Geology of the North American Cordillera at the forty-ninth parallel, Parts I and II—by Reginald Aldworth Daly

Memoirs and Reports Published During 1914.

REPORTS, ETC

Summary Report for the calendar year 1912 No 1305

Museum Bulletin No 2 Contains articles Nos 13 to 18 of The Geological Series of Museum Bulletins, and article No 2 of the Anthropological Series of Museum Bulletins

Prospector's Handbook No 1 Notes on radium-bearing minerals—by Wyatt Malcolm

MUSEUM GUIDE BOOKS

The Archæological collection from the southern interior of British Columbia—by Harlan I Smith No 1290

MEMOIRS—GEOLOGICAL SERIES

MEMOIR 23 *No 23, Geological Series* Geology of the coast and islands between the Strait of Georgia and Queen Charlotte sound, B C—by J Austen Bancroft

MEMOIR 25 *No 21, Geological Series* Report on the clay and shale deposits of the western provinces (Part II)—by Heinrich Ries and Joseph Keele

MEMOIR 30 *No 40, Geological Series* The basins of Nelson and Churchill rivers—by William McInnes

MEMOIR 20 *No 41, Geological Series* Gold fields of Nova Scotia—by W Malcolm

MEMOIR 36 *No 33, Geological Series* Geology of the Victoria and Saanich map-areas, Vancouver island, B C—by C H Clapp

MEMOIR 52 *No 42, Geological Series* Geological notes to accompany map of Sheep River gas and oil field, Alberta—by D B Dowling

MEMOIR 43 *No 36, Geological Series* St Hilaire (Beloeil) and Rougemont mountains, Quebec—by J J O'Neil

MEMOIR 44 *No 37, Geological Series* Clay and shale deposits of New Brunswick—by J Keele

MEMOIR 22 *No 27, Geological Series* Preliminary report on the serpentines and associated rocks, in southern Quebec—by J A Dresser

MEMOIR 32 *No 25, Geological Series* Portions of Portland Canal and Skeena Mining divisions, Skeena district, B C—by R G McConnell

MEMOIR 47 *No 39, Geological Series* Clay and shale deposits of the western provinces Part III—by Heinrich Ries

MEMOIRS—ANTHROPOLOGICAL SERIES

- MEMOIR 48** *No. 2, Anthropological Series* Some myths and tales of the Ojibwa of southeastern Ontario—collected by Paul Radin
- MEMOIR 45** *No. 3, Anthropological Series* The inviting-in feast of the Alaska Eskimo—by E. W. Hawkes
- MEMOIR 49** *No. 4, Anthropological Series* Malecite tales—by W. H. Mechling

Memoirs in Press, August 15, 1914.

- MEMOIR 40** *No. 24, Geological Series* The Archaean geology of Rainy lake—by Andrew C. Lawson
- MEMOIR 19** *No. 26, Geological Series* Geology of Mather Lake and Sunset minus Boundary district, B.C.—by O. E. McRoe
- MEMOIR 39** *No. 35, Geological Series* Kewagami Lake map-area, Quebec—by M. L. Wilson
- MEMOIR 41** *No. 38, Geological Series* The "Fern Ledges" Carboniferous flora of St. John, New Brunswick—by Marie C. Stopes
- MEMOIR 51** *No. 43, Geological Series* Geology of the Nanaimo map-area—by C. H. Clapp
- MEMOIR 53** *No. 44, Geological Series* Coal fields of Manitoba, Saskatchewan, Alberta, and eastern British Columbia (revised edition)—by D. B. Dowling
- MEMOIR 61** *No. 45, Geological Series* Moose Mountain district—southern Alberta (second edition)—by D. D. Cairnes
- MEMOIR 55** *No. 46, Geological Series* Geology of Field map-area, British Columbia and Alberta—by John A. Allan
- MEMOIR 58** *No. , Geological Series* Texada island—by R. G. McConnell
- MEMOIR 60** *No. 47, Geological Series* Arisug Antigonish district—by M. Y. Williams
- MEMOIR 50** *No. , Geological Series* Upper White River district, Yukon—by D. D. Cairnes
- MEMOIR 42** *No. 1, Anthropological Series* The double curve motive in northeastern Algonkian art—by Frank G. Speck
- MEMOIR 62** *No. 5, Anthropological Series* Abnormal type of speech in Nootka—by E. Sapir
- MEMOIR 63** *No. 6, Anthropological Series* Noun reduplication in Comox, a Salish language of Vancouver island—by E. Sapir
- MEMOIR 46** *No. 7, Anthropological Series* Classification of Iroquoian radicals with subjective pronominal prefixes—by C. M. Barbeau
- MEMOIR 54** *No. 2, Biological Series* Annotated list of flowering plants and ferns of Point Pelee, Ont., and neighbouring districts—by C. K. Dodge

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HAROLD S. JOHN

30 JUL 1927

A Botanical Exploration of the North Shore of the Gulf of St. Lawrence; Including an Annotated List of the Species of Vascular Plants

NORTH SHORE OF THE GULF OF ST. LAWRENCE

The north shore of the gulf of St. Lawrence, the region familiarly known as the "côte nord," is the area to which this report relates. The area lies between Pentecôte river on the west and Blane-Sablon river on the east, and forms part of the south shore of Saguenay county, province of Quebec. As used here the expression "south shore" has a broader meaning than its literal one. Of course many of the plants were collected at spots away from the actual shore-line, but because of the difficulty of inland travel, all the writer's collecting was done in the vicinity of the coast.

GEOLOGY

The area may be divided into two markedly different geological regions: (1) the dominant one, of Archaean gneiss, anorthosite, or occasional crystalline limestones, occupying the inland parts in all cases, and in most areas extending out to form the coastal regions and the islands, (2) one of sedimentary limestones, such as at Manowin island, Mingan islands, and the adjacent mainland, and the region bordering the strait of Belle Isle.

The following quotations from authoritative sources give a general idea of the geology of the area:

"With the exception of a narrow border of Silurian strata on the strait of Belle Isle, another at the mouth of the Mingan river, and a third near the Seven islands, . . . the north shore of the St. Lawrence is the southern boundary of this ancient series of deposits"¹ (Laurentian, chiefly granites and gneisses.)

"It is not until reaching the Mingan islands, between 500 and 600 miles to the northeastward, that we have any of its (calcareous formation) characteristic fossils. At the Mingan islands and on the neighbouring coast, there appears an interesting extension of this formation extending from the Mingan river to Ste. Geneviève island, a distance of about 45 miles. It occupies the inner range of islands and most of the coast."²

¹ *Geology of Canada*, 1863, p. 47

² *Loc. cit.*, p. 119

"Between this exposure (Mingan islands) and Bradore bay, the distance is about 300 miles. The shore, which is very much indented by bays and inlets, and fringed with a multitude of islands, presents an almost continuous line of bare rocks, but in no part of it have there been observed any strata, but such as belong to the Laurentian series. On the east side of Bradore bay, which is situated near the entrance of the strait of Belle Isle from the gulf of St Lawrence, the Palæozoic rocks again present themselves. Resting on the Laurentian gneiss, they run along the north coast for nearly 80 miles, with a breadth of probably 10 or 12 miles On the strike these yellow-weathering limestones pass in some parts into grey, compact, pure limestone. . . . In Forteau bay, the whole mass appears to be more or less fossiliferous."¹

Referring again to the north shore of the strait of Belle Isle, "in very limited places along the shore are to be seen at first basal sandstones and these pass up more and more into arenaceous and pure limestones, all of which are of Lower Cambrian age."²

PHYSIOGRAPHY

As is the case along the north shore of the St. Lawrence, there occurs farther eastward along the north shore of the gulf a mountain range, or rather a range of hills, formed of Laurentian rocks. In many places they extend to the shore-line, forming in some cases cliffs several hundred feet in height, but more commonly bare, rounded hills that rise to successively higher eminences farther inland.

"There are two well-defined areas to which I would call attention, a simple designation of them as sea-coast and interior will present to you the general idea which I wish to convey. I will draw the line, as near as my own observation coincides with that of others, at somewhat between 2 and 4 miles inland. Of the interior of this whole region very little is known. In summer, woods of mostly low, stunted spruce, with various evergreens, are everywhere abundant, and it is with the utmost difficulty that one can make any progress whatever. Few have attempted to penetrate this area, and we know but little of it. Its accessible edges abound in many plants very similar to ours, especially those crowning the summits of the White mountains. That part styled the coast . . . is composed mostly of numerous low, hilly island crests, everywhere interspersed with narrow straits of water, besides a narrow ribbon of land up and down the coast-line itself. The general flora of all the islands is much the same, but there are localized species of both wild and introduced plants."³

Inland behind the range of hills is an elevated plateau with forested lake-shores, bogs, and tundra stretching on for unknown distances. The rivers flowing from the elevated plateau that forms the interior of northern Quebec form numerous spectacular cataracts and waterfalls of considerable size.

¹ Loc. cit., pp. 287, 288

² Schuchert, Prof. Charles, letter, April 24, 1916

³ Stearns, W. A., Proc. U. S. Nat. Mus., vi, 126 (1883)

Immediately behind Seven Islands (which is 300 miles east of Quebec) the hills rise to a height of 1,700 feet, and from this village to St. Jean river skirt the shore very closely. A few miles inland from here is St. Jean mountain, 1,416 feet high.

The coast-line along this stretch shows very little diversity, there being no deep bays and no islands of consequence.

From the mouth of St. Jean river eastward to Betchouane is a narrow coastal plain formed partly of sand-plain and partly of the nearly horizontal Silurian limestones that overlie the Archæan rocks in this region.

The Mingan islands are nearly all of similar formation. From a shingle beach or directly from the sea they rise in abrupt cliffs to 200 feet in height. The talus slopes and the gently rising slope extending back from the top of the cliff are well wooded. The summit of the island is usually open and boggy. The strata dip slightly to the south and west.

Eastward from here the Laurentian rocks are the country rock and the coast-line becomes more irregular with many indentations and small islands.

Natashkwan river, near its mouth, traverses a large sand-plain which to the east approaches the shore in the form of high sand bluffs.

From Kégashka eastward to the strait of Belle Isle the coast is bordered by a fringe of almost innumerable islands, of all sizes and shapes, that sometimes attain a height of 500 feet and that afford shelter in stormy weather. The flat tablelands into which the sedimentary rocks of the strait of Belle Isle are divided form a very different skyline.

CLIMATE

No reliable meteorological data are available from any point between the village of Clarke, in Arnaud township, and Anoum point, a few miles east of Blanc-Sablon river, but these two points are approximately the west and east limits of the region, and data from them admirably show the differences in climate.

The eastern part of the coast has a longer growing season, although its temperature is much lower, but the vegetation is of a much more arctic type.

Clarke, Saguenay County, Quebec¹

1909										1910		
	Temperature				Rain	Snow	Fogs	Tempera- ture	Rain	Snow	Fogs	
	Mean daily range	Maximum	Minimum	Monthly mean								Amount in inches
° F								° F				
January	24 3	41 0	-38 0	0 9	0 50	23 0	1	11 5	3 95	24 0	1	
February	24 2	33 0	-33 0	2 7	0 00	49 5		4 9	0 00	26 5		
March	21 0	44 0	-22 0	22 1	0 40	19 0		17 1		29 0		
April	22 0	53 0	7 0	30 8	0 20	14 5		32 1	5 70	10 0	2	
May	19 7	71 0	27 0	43 6	2 94	1 5		42 7	2 08			
June	24 8	77 0	28 0	54 0	5 33			51 4	4 19			
July	18 1	78 0	44 0	61 0	6 87			60 2	4 57			
August	25 7	88 0	37 0	62 1	1 68			58 1	3 38		1	
September	15 7	69 0	31 0	50 0	10 15			47 9	1 68		1	
October	14 1	67 0	23 0	41 7	4 66	2 0		37 9	4 31	2 0	2	
November	14 8	48 0	0 0	27 5	4 64	23 5		31 7	5 82	16 5		
December	10 8	41 0	-11 0	19 9	0 90	26 3	3	10 3	0 00	31 0		
Total	24 9	88 0	-38 0	34 7	38 27	159 3	4	33 8	35 68	139 0	7	

¹ Dept. Marine and Fisheries, Ann. Rept.

Amour Point, Strait of Belle Isle¹

	1909				1910			
	Tempera- ture	Rain	Snow	Fogs	Tempera- ture	Rain	Snow	Fog
	Monthly mean	Amount in inches	Amount in inches	No of days	Monthly mean	Amount in inches	Amount in inches	No of days
	° F				° F			
January	4 9	0 10	25 0		16 4	0 39	2 2	
February	7 2		17 2		8 0	0 00	1 8	
March	24 7		9 2		19 3	0 13	5 4	
April	26 8		1 1	2	32 2	1 51	11 0	6
May	37 3	1 24		6	35 5	2 17	13 0	8
June	46 1	3 37		7	43 3	4 33		11
July	50 0	3 47		19	48 0	2 41		13
August	52 7	2 33		9	54 0	1 85		10
September	49 3	3 06		6	47 8	0 57		3
October	43 0	4 10		8	36 3	2 23		7
November	31 5	1 69	1 4	6	32 7	4 12	0 5	6
December	28 4	3 15	1 2		18 2			
Total	33 5	22 51	55 1	63	32 6	19 71	33 9	64

BOTANICAL EXPLORATIONS

Although early explorers may have carried to Europe plants from the north shore of the gulf of St Lawrence, the earliest definite records known to the writer are those of John James Audubon, who, though an ornithologist on a quest for birds, noticed the plants, enthused over their beauty, and yearned for the knowledge that would give him a fuller understanding of them. Audubon and his party, which consisted of five young men—his son, John Woodhouse Audubon, Dr George C Shattuck, William Ingalls, Thomas Lincoln, and Joseph Coolidge—visited the north shore of the gulf in the schooner *Ripley*. On June 17, 1833, they reached American harbour, now called havre des Canadiens, Natashkwan. They cruised eastward from here, touching at Petit Mécatina, baie de Portage, and Brador. Having spent nearly two months on the coast they sailed from the strait of Belle Isle homeward bound on August 11, 1833. The party collected some botanical specimens, which seem to have been destroyed in one of the two fires that burned many of Audubon's possessions in later years. In his journal "Audubon and his Journals" (1897), published by Maria R. Audubon, there are several references to the native plants.

In 1833, the same year as that of Audubon's visit, the *Gulnare*, of the Royal Navy, under Capt. Bayfield, was making the survey on which all modern charts are based of the coast of the north shore of the gulf of St. Lawrence. From Audubon's journal it appears that he met with the *Gulnare* first at American harbour (Natashkwan) and later at several other points to the eastward. Audubon refers several times to the doctor on this vessel, "who appeared to be a man of talents, a student of botany

¹ Dept. Marine and Fisheries, Ann. Rept.

and conchology." And again he writes (page 392) "Dr Wm. Kelly has given me the list of such plants as he has observed on the coast as far as Mécatina island" In 1886 Miss M R Audubon, while preparing for publication "Audubon and his Journals," found between the leaves of Audubon's original Labrador Journal a plant-list It is on a large piece of folded paper, ruled in pencil and in ink It contains the names of 147 species and has the heading "List of plants collected during the survey of the coast of Labrador between Mingan and Mécatina" Miss Audubon, thinking that the list was that of the plants collected by Audubon himself, gave it to Mr Walter Deane, the present owner Through his courtesy the author has been allowed to borrow and study the list and to quote from it To one familiar with the details of Audubon's Labrador trip there are several discrepancies in this list In the first place neither Audubon nor any of this party was making a "survey of the coast of Labrador between Mingan and Mécatina" Audubon reached the coast at Natashkwan, 90 miles east of Mingan, and his explorations continued to the strait of Belle Isle, 150 miles east of île Petit Mécatina In the second place some of the species are marked as coming from Anticosti, which Audubon did not visit A footnote about *Cornus suecica* states that it is first met with in St Lawrence river at Brandypot islands, which are well up the river, near Rivière-du-Loup (Fraserville). Audubon and his party did not descend the St Lawrence When these facts are reviewed and the perfect agreement of the details noted, it is evident the list in question was compiled by Dr Wm Kelly and given by him to Audubon on July 9, 1833 His determinations were made with the aid of the floras by Pursh and Eaton Some of the plants recorded were from outside the area considered here, some of the species recorded seem doubtful as natives of this region, others are in groups that have been confused and later segregated, and others are quite indeterminate On the other hand, some very rare and local but unmistakable species were detected, thus giving an authenticity to the list Such records as these have been incorporated in the annotated list of species, but all doubtful ones have been omitted

There are two letters from Dr Kelly preserved in Sir William Hooker's correspondence In the first, written from Quebec, November 8, 1830, he speaks of sending a *Cornus* which he felt to be different from *Cornus canadensis* This is without doubt the specimen of *Cornus suecica* L. which is preserved in the herbarium of the Royal Botanic Gardens, Kew, and which is cited by Hooker in his *Flora Boreali-Americana*, i, 277 (1840) The second letter, written from Quebec, May 10, 1833, mentions by number and, in certain cases, by generic name, eight plants that he was sending for identification It is clear that he had previously studied them with Mr Sheppard The package containing these eight specimens seems to have been lost in transit There is no record that Dr Kelly made any more extensive plant collections during his trip on the *Gulnare*. The list given to Audubon seems to have been based principally on field observations.

From July 20 to September 25, 1849, Dr Horatio R Storer with his brother, F H Storer, and Dr Jeffries Wyman, explored from Natashkwan to Red bay, Labrador Dr Storer collected numerous specimens of the

vascular plants, which are now in the Gray Herbarium. He is the only collector who has found the sea lavender, *Limonium trichogonum*, in Labrador. He published a report on the fishes of Labrador, but did not include even a casual mention of the plants. His intensely interesting journal contains only a few meagre references to plants.

Abbé J. B. A. Ferland in 1858 made a voyage along the north shore of the gulf from Mingan to Blanc-Sablon. The few plants of his collection came probably from Tabatière bay, some of them being now in the Gray Herbarium. His botanical observations were very restricted and of a very popular sort. In his little book, "Le Labrador," are a few notes upon the vegetation.

Dr. Henry Bryant, an ornithologist seeking to follow in Audubon's tracks, in 1860 coasted along the north shore of the gulf from Romaine river to Château bay, Labrador. He collected small specimens of various plants, now in the Gray Herbarium, but he did not publish any report upon them.

A. S. Packard was one of the seven members of the Williams College Expedition. The party was landed on Caribou island (île de la Demoiselle) July 7, 1860, and remained there in camp for fifty days. The commoner plants were observed and later were recorded in Chapters iv and v of Packard's "Labrador coast" (1891).

A party consisting of A. E. Verrill, Alpheus Hyatt, and N. S. Shaler were at Mingan islands early in July, 1861. All the members of the party aided in collecting plants, which was one of the secondary activities of the trip. Their collection, now in the Eaton Herbarium, Yale University, and a second fragmentary set in the Gray Herbarium, contains 48 species. A list based upon these collections was published by Verrill.¹

Rev. S. R. Butler spent several years previous to 1870 in southern Labrador and made extensive observations on the flora. His collection, made at Forteau bay and Amour point which are in Labrador, and at Caribou island (archipel du Vieux-Fort, île de la Demoiselle), is now in the Eaton Herbarium. His list has a total of 135 species of vascular plants.²

The most thorough botanical survey of any considerable part of the north shore was made by D. N. Saint-Cyr in two separate trips. In 1882, in a small steamer, he visited Seven Islands, exploring from there to Mingan islands, where he did a large amount of collecting and continued east as far as Watshishu.

In July, 1885, his second trip took him to those parts of the coast visited previously and eastward to île Gros Mécatina. Saint-Cyr's collection forms an important part of the Herbar du Musée Scolaire, Département de l'Instruction Publique, Quebec. The author visited this collection in Quebec, checked the plants in connexion with Saint-Cyr's published list, and with the kind permission of the officials in charge, borrowed such plants as needed critical study. Saint-Cyr reports about 227 species from this region.

In some cases collections made on Mingan islands, not included in Saint-Cyr's list, are in his following "Catalogue of plants" in the Museum. There is an occasional discrepancy between the same record as given in

¹ Proc. Boston Soc. Nat. Hist., ix, 146-52 (1862)

² Can. Nat., v, 350-3 (1870)

the two lists: sometimes the data on the specimens in the Musée Scolaire are quite different from those of the published records; and sometimes the specimen could not be found. In view of this confusion, the author has used his judgment in such cases as to what were the correct data, or as to what records were so untrustworthy as to warrant rejection.

John A. Allen visited Labrador in 1882, but as he published nothing about the trip, it has been difficult to glean any information regarding it. He seems to have sailed from Boston in the *Polar Star*, piloted by Owen Chevalier. Judging from the dates on Allen's specimens, he collected from July 26 to 31 at Bonne-Espérance and adjacent regions. Then he sailed eastward and northward. On his return trip he again collected near Bonne-Espérance on August 27-28. A nearly complete set of his plants is in the Gray Herbarium, and his own set is in the herbarium of the Connecticut Agricultural Experiment Station, New Haven. In a letter written to M. S. Bebb, now in the possession of Mr. Walter Deane, Allen says: "During the limited time that I was able to go ashore and collect, I was busy collecting everything I could get hold of and had no time to study the variations of the willows in the field, which I suppose would be the best way to do it. I have about 270 phænogams and vascular cryptogams from Labrador, exclusive of willows." The reference to the willows is explained by the fact that Allen sent all his specimens to Bebb for identification. At the Experiment Station, among Allen's correspondence is a series of letters from Bebb. On October 13, 1882, Bebb had just received these willows and in a letter to Allen brimming with enthusiasm wrote: "The truth is there is no spot on the whole American continent which presents a willow flora so full of interest and I may add at the same time so full of tantalizing intricacy as Labrador." In this same letter Bebb gives tentative names to some of them.

- 5 *Salix balsamifera* Barratt, f. *typica*
- 12 " " n. var.
- 3 *S. candida*
- 2 *S. archica* forma
- 11, 12 *S. argyrocarpa*
- 24, 25 *S. viminalis*
- 23, 26 *S. alba* × *fragilis*

This is only a preliminary and partial list, but none of these species is among Allen's plants either in the Gray Herbarium or the Herbarium of the Experiment Station. Except for an interval caused by Bebb's illness, Allen and Bebb corresponded about these willows for several years. Finally Bebb sent most of them to Kew for comparison. Sir J. D. Hooker replied, "Prof. Oliver and Mr. Brown at the herbarium have spent four hours over the *Salices*, with I fear only negative results." Bebb alludes to these willows in a letter to Dr. Watson, dated August 6, 1885, now in the Gray Herbarium, saying, "Three years ago or more Mr. Allen made a splendid collection of *Salices* in Labrador and on an average at least once a year since then I have tackled that lot and tried to do something with it—the result being mainly negative every time."

Allen's Labrador willows with Prof. Oliver's annotations remained for some time in Bebb's herbarium, and both ultimately went to the Field Museum, Chicago, where they now are. The writer has incorporated the records in this report.

Allen called on other specialists for help in the identification of his plants. William Boott named all his *Carices*. Engelmann named several of his species of *Juncus*. Sereno Watson identified for him a score of miscellaneous species. Allen's plants were well prepared, and well identified, and they form one of the most important collections from the region.

"W. A. Stearns spent two summers, and one whole year in Labrador and the north shore of the gulf of St Lawrence. The two summer months of 1875 were spent within a radius of 60 miles southwest and 10 miles northeast of Bonne-Espérance. He stayed from September, 1880, to September, 1881, at Bonne-Espérance and explored the coast from Mingan to Red bay, in July and August, 1885, he again visited the Labrador coast, sailing from Boston in a sloop. He touched at various points between Bonne-Espérance and Triangle harbour a few miles south of Hamilton inlet."¹ His specimens of plants are in the U S National Herbarium and were in part seen by the author. His list includes 157 species.

William Palmer in 1887 visited the north shore of the gulf and made a small collection of plants now in the U S National Herbarium. The data on one of his plants are evidence that he visited the mouth of Mingan river.

Dr C. B. Robinson spent the summer of 1907 along the north shore of the gulf, with Seven Islands as a centre. He collected several hundred species of plants now in the herbarium of the New York Botanical Garden, with a duplicate set in the Gray Herbarium, but never published any extended account of them, nor did he leave any manuscript list.

Dr. C. W. Townsend made two trips to the north shore as well as the one elaborated in this report. On May 24, 1909, he arrived with A. C. Bent at Seven Islands bay and spent a month in cruising in a "barge" east to Natashkwan. The plants collected are now in the Gray Herbarium.

In 1912 with E. G. Parrot, he canoed up Natashkwan river for 80 miles. Although many of the plants were not collected in the coastal region they are included in this list. Of special interest is the rediscovery of *Salix adenophylla* Hook. The plants are now in the Gray Herbarium.

Prof. M. L. Fernald spent five days at Blanc-Sablon in early August, 1910, and explored as far west as Brador bay. He collected 237 species, now in the Gray Herbarium. He describes the region and its flora and mentions 81 species.²

Prof. K. M. Wiegand visited Blanc-Sablon in September of the same year. He was working in conjunction with Prof. Fernald and his collections are included in the total given above.

Harold St. John made his botanical collections, which are the basis of this report, during the three summer months of 1915. With the ornithologist, Dr. C. W. Townsend, he coasted in a steamer from Seven Islands bay to Pointe-aux-Esquimaux and thence in a small schooner to Blanc-Sablon and afterwards returned to Mingan. The botanical results are tabulated as follows.

Number of species collected	511
Number of sheets collected	2,174
Number of notes on the distribution of various species	3,239

¹ Townsend, C. W. and Allen, G. M., Proc. Boston Soc. Nat. Hist., xxxii, 292 (1907)

² Rhodora, xii, 109-162 (1911)

The first set of specimens is in the herbarium of the Geological Survey, Canada, the second in the Gray Herbarium. The geographic names on the printed labels were those of the Rinfret map.

PHYTOGEOGRAPHY

A botanist visiting the north shore of the gulf of St. Lawrence cannot help being struck by the definite and local occurrence of many of the species of plants, and if he accumulate specimens and accurate notes on their distribution, he will arrive at some very definite correlations. These are especially obvious because, although the whole region seems to have been thoroughly glaciated, striæ and lunoid furrows being frequently met with, yet glacial drift is conspicuously wanting, except above an altitude varying from 250 to 1,000 feet, when glacial deposits in the form of huge erratics are suddenly met with on every side.

"The remarkable absence of erratics in the Moisie, until an altitude of about 1,000 feet above the sea is attained, may be explained by the supposition that they may have been carried away by icebergs and coast ice during a period of submergence to the extent of about 1,000 feet."¹

As a consequence of the washing off of all loose particles, the soil at the lower levels has been recently formed in situ and hence does not differ fundamentally in its chemical content from that of the country rock. This affords clear and neatly delimited conditions for the study of the correlations between the nature of the soil and the distribution of the plants. In reference to one portion of this area Prof. Fernald wrote "Here was an ideal place to study the vegetation of a highly calcareous region side by side with the plants of a siliceous and gneissoid area, and if anyone doubts the dissimilarities of these floras he can find no better spot in which to undeceive himself than at Blanc-Sablon."²

EXTENT OF THE VASCULAR FLORA

The annotated list of flora shows 622 species, of which 40 are weeds or introduced plants, rank intruders that demand the attention of the botanist but often fail to interest him. This small total of adventive plants is an indication of the amount of settlement in the region. Each little fishing village has a few weeds, but they are obviously newcomers. In no case has the weed spread to any extent beyond the limits of the settlement, and in no case is it difficult to decide whether the plant is a native of the region. In Dr. Wm. Kelly's manuscript list made in 1833, the earliest plant record, only one of these 40 species of weeds—*Vicia Cracca*—is mentioned. Omitting the weed element a flora of 582 species of native vascular plants remains.

¹ Hind, H. Y., Can. Nat., 2nd ser., 1, 302 (1864).

For further evidence on the postglacial submergence of the coast of Labrador, and the absence of drift on the lower levels, see Daly, R. A., "The geology of the northeast coast of Labrador," Bull. Mus. Comp. Zool., Harvard Univ., xxxviii, geol. ser., v, 205-70 (1902).

² Fernald, M. L., Rhodora, xii, 122 (1911).

HALOPHYTES

Within reach of the influence of salt water, whether the shore be marshy, sandy, or rocky, is a characteristic assemblage of plants commonly known as halophytes,¹ because they grow where salt water is the governing factor. On a stretch of coast of this length the greater number of these plants are as certain to be present throughout its extent as is salt water itself. They are plants of broad ranges, and within this comparatively restricted area present few difficult problems. The total number known to occur on this coast is 66, partly true halophytes of the salt marshes, partly psammophilous halophytes of the seashore sands and gravels, and partly plants (probably not truly halophytic) of broad inland range on the North American continent, but in Saguenay county strictly maritime. The components of this flora are enumerated below.

LIST OF HALOPHYTES

<i>Ruppia maritima</i> , var. <i>rostrata</i>	<i>C. maritima</i>
<i>R. maritima</i> , var. <i>subcapitata</i>	<i>C. salina</i> , var. <i>laucolata</i>
<i>Zostera marina</i>	<i>C. subspathulata</i>
<i>Z. marina</i> , var. <i>angustifolia</i>	<i>Spergularia canadensis</i>
<i>Spartina alterniflora</i>	<i>Stellaria humifusa</i>
<i>Puccinellia paupercula</i>	<i>Potentilla pacifica</i>
<i>P. paupercula</i> , var. <i>alaskana</i>	<i>Hippuris vulgaris</i> , var. <i>maritima</i>
<i>P. coarctata</i>	<i>Limonium trichogonum</i>
<i>Scirpus rufus</i> (not seen by the writer, but	<i>Glauco maritima</i> , var. <i>obtusifolia</i>
halophytic in other regions about the	<i>Lomatogonium rotatum</i> , form <i>americanum</i>
gulf of St. Lawrence)	<i>Plantago decipiens</i>
<i>Carex glauca</i> , var. <i>amphigena</i>	<i>Galium trifidum</i> , var. <i>halophilum</i>
<i>C. norvegica</i>	

LIST OF PSAMMOPHILOUS HALOPHYTES

<i>Ammophila breviligulata</i>	<i>C. triactylites</i>
<i>Poa eminens</i>	<i>Lathyrus maritimus</i>
<i>Hordeum boreale</i>	<i>Ligusticum scoticum</i>
<i>Polygonum Fowleri</i>	<i>Caroplegium lucidum</i>
<i>Salsola Kali</i>	<i>Euphorasia purpurea</i>
<i>Arenaria peplodes</i>	<i>E. purpurea</i> , var. <i>Farlowii</i>
<i>A. peplodes</i> , var. <i>diffusa</i>	<i>E. purpurea</i> , var. <i>Randii</i>
<i>A. peplodes</i> , var. <i>robusta</i>	<i>Mercurialis maritima</i>
<i>Montia lamprosperma</i>	<i>Senecio palustris</i>
<i>Cakile edentula</i>	<i>S. Pseudo-Arnica</i>
<i>Cochlearia cyclocarpa</i>	

PLANTS HALOPHYTIC ALONG THE SOUTH SHORE OF SAGUENAY COUNTY, BUT BROADLY DISTRIBUTED ACROSS THE INTERIOR OF NORTH AMERICA

<i>Potamogeton perfoliatus</i> , var. <i>gracilis</i>	<i>Juncus balticus</i> , var. <i>littoralis</i>
<i>P. pectinatus</i>	<i>Rumex occidentalis</i>
<i>Zannichellia palustris</i>	<i>R. maritimus</i>
<i>Triglochin palustris</i>	<i>Atriplex patula</i>
<i>T. maritima</i>	<i>A. patula</i> , var. <i>hastata</i>
<i>Hierochloa odorata</i> , var. <i>fragrans</i>	<i>Stellaria crassifolia</i>
<i>Agrostis alba</i> , var. <i>maritima</i>	<i>Ranunculus Cymbalaria</i>
<i>Calatropa aquatica</i>	<i>Sedum roseum</i>
<i>Elymus arenarius</i> , var. <i>villosus</i>	<i>Potentilla Anserina</i>
<i>Eleocharis palustris</i> , var. <i>glaucescens</i>	<i>P. Anserina</i> , var. <i>sericea</i>
<i>Scirpus americanus</i>	<i>Lathyrus palustris</i> , var. <i>pilosus</i>

¹ Greek *halos*, salt, *phyton*, a plant

OXYLOPHYTES

Since the Archæan rocks which occupy such a large part of Saguenay county form on disintegration an acid soil, the region is clothed with a typical oxylophytic vegetation. As early as 1830 it was pointed out that "the heaths are found most luxuriantly where granite or other primitive rocks are found,"¹ but in the light of recent field work the "other primitive rocks" should not include those which supply abundant available lime to the soil. This principle is well illustrated in the area visited, the Ericacææ being represented by 28 species which form a very large part of the vegetation. The oxylophytes form the largest element in the flora, numbering 166 species, many of which are strictly confined to the acid areas, the others being best developed in acid soils, but apparently tolerant of a slight amount of lime. In several limestone regions, plants ordinarily confined to acid areas were found growing on the boggy or peaty crests of limestones. Their presence there is easily accounted for by the ready solubility of the lime, which, by leaching, was early removed from the crests, which, although limestone, are no longer calcareous. The following list enumerates the plants of the region which are characteristic of acid, non-calcareous soils. Those not quite constant in their habitat are marked "(indifferent)"

LIST OF TYPICAL OXYLOPHYTES

<i>Woodsia ilvensis</i> (indifferent)	<i>E. gracile</i>
<i>Pteridium latiusculum</i>	<i>E. tenellum</i>
<i>Osmunda Claytoniana</i> (indifferent)	<i>E. angustifolium</i>
<i>O. cinnamomea</i>	<i>E. angustifolium</i> , var. <i>major</i>
<i>Lycopodium Selago</i>	<i>E. virginicum</i>
<i>L. Selago</i> , var. <i>appressum</i>	<i>Rhynchospora alba</i>
<i>L. Selago</i> , var. <i>patens</i>	<i>Carex ænea</i>
<i>L. annotinum</i>	<i>C. ciliis</i>
<i>L. annotinum</i> , var. <i>pungens</i>	<i>C. cchinata</i>
<i>L. clavatum</i>	<i>C. cchinata</i> , var. <i>angustata</i>
<i>L. clavatum</i> , var. <i>monostachyon</i>	<i>C. canescens</i> , var. <i>sublobata</i>
<i>L. clavatum</i> , var. <i>monostachyon</i>	<i>C. canescens</i> , var. <i>disjuncta</i>
<i>L. obscurum</i>	<i>C. brunnescens</i> ¶
<i>L. sitchense</i>	<i>C. tenuiflora</i> (indifferent)
<i>L. complanatum</i>	<i>C. trispoma</i>
<i>L. complanatum</i> , var. <i>flabelliforme</i>	<i>C. tenella</i> (indifferent)
<i>Selaginella rupestris</i> (indifferent)	<i>C. chordorrhiza</i>
<i>Pinus Banksiana</i>	<i>C. rupestris</i>
<i>Picea mariana</i>	<i>C. lenticularis</i>
<i>Sparganum hyperboreum</i>	<i>C. pauciflora</i>
<i>Scheuchzeria palustris</i>	<i>C. stylosa</i>
<i>Hierochloë alpina</i>	<i>C. umbellata</i> , var. <i>brevirostris</i>
<i>Agrostis borealis</i>	<i>C. deflexa</i> (indifferent)
<i>Deschampsia flexuosa</i>	<i>C. luvula</i> (indifferent)
<i>D. atropurpurea</i>	<i>C. paupercula</i>
<i>Glyceria canadensis</i>	<i>C. limosa</i>
<i>G. Fernaldia</i> (indifferent)	<i>C. rariflora</i>
<i>Eleocharis acicularis</i>	<i>C. oligosperma</i>
<i>Scirpus cæspitosus</i>	<i>C. saxatilis</i> , var. <i>rhomalea</i>
<i>S. atrocinctus</i>	<i>Calla palustris</i>
<i>Eriophorum Chamissonis</i> (indifferent)	<i>Eriocaulon septangulare</i>
<i>E. callitrix</i>	<i>Juncus bufonius</i> (indifferent)

¹ Thomson, William, London's Mag. Nat. Hist., 111, 417 (1830)

LIST OF TYPICAL OXYLOPHYTES—*Continued*

- J. rigidus*
J. Vaseyi
J. filiformis
J. br. evcaudatus
J. pelocarpus
J. subtilis (indifferent)
Luzula confusa
L. spicata
L. campestris, var. *multiflora*
Clintonia borealis (indifferent)
Smilacina trifolia
Maianthemum canadense (indifferent)
Cypripedium acaule
Habenaria obtusata
Epipactis repens, var. *ophioides*
Listera cordata
Salix argyrocarpa
S. humilis
S. phylicifolia
S. pyrifolia
S. Uva-ursi
Populus tremuloides
Comandra lucida (indifferent)
Rumex Acetosella (indifferent)
Polygonum arifolium
Arenaria grœnlandica
Silene acaulis, var. *exscapa*
Lychnis alpina
Nymphoanthus variegatus (indifferent)
Ranunculus hyperboreus
Coptis trifolia
Subularia aquatica
Sarracenia purpurea
Drosera rotundifolia
D. anglica
D. longifolia
Sedum villosum
Ribes hirtellum (indifferent)
Spirœa latifolia
Pyrus arbutifolia, var. *atropurpurea*
Potentilla palustris
P. palustris, f. *subsericea*
P. palustris, var. *parvifolia*
P. tridentata (indifferent)
Rubus Chamœmorus
Sanguisorba canadensis
S. canadensis, var. *latifolia*
Prunus pennsylvanica
Oxalis Montana
Empetrum nigrum
E. atropurpureum
E. Eamsii
Nemopanthis mucronata
Hypericum boreale
Viola pallens
Viola adunca
Epilobium palustre
E. palustre, var. *monticola*
E. palustre, var. *longistamineum*
Circœa alpina
Aralia hispida
Cucula bulbifera
Cornus suecica (indifferent)
Moneses uniflora
Monotropa uniflora
Ledum grœnlandicum
Rhododendron canadense
Loiseleuria procumbens
Kalmia angustifolia
K. polifolia
Andromeda glaucophylla
Chamae-laphne calyculata
Arctostaphylos alpina (indifferent)
Chrogeomys hispidula
Vaccinium canadense
V. pennsylvanicum
V. pennsylvanicum, var. *myrtilloudes*
V. pennsylvanicum, var. *angustifolium*
V. uliginosum
V. vitis-Idæa, var. *minus*
V. Oxycoccus
Diapensia lapponica
Lysimachia terrestris
Trientalis borealis
Menyanthes trifoliata
Lycopodium uniflorum
Veronica scutellata
Melampyrum lineare
Utricularia minor
U. cornuta
Galium Claytoni
Durvillea Louicea
Lonicera œulea, var. *villosa*
L. œulea, var. *calvescens*
Viburnum cassinoides
Lobelia Dortmanna
Solidago macrophylla, var. *thyrsouka*
S. graminifolia
Asarum radula, var. *strictum*
Gnaphalium uliginosum

CALCICOLES

The annotated lists in this report frequently contain the phrase, "known only from the calcareous region of Mingan islands and the strait of Belle Isle." The correlation between the presence of certain plants and soils rich in calcium is well known and has often been pointed out,¹ but in the area studied this affinity is particularly striking.

Little is known of the flora of Manowin island, which has calcareous, fossil-bearing rocks, but there is no reason to suppose it will prove an exception to the rule.

Vegetation in the vicinity of Mingan islands differs considerably from that on the Laurentian areas to the west. On every side are plants not seen in the Laurentian area. At the top of the white shingle beach of the islands is a riot of such plants as *Potentilla fruticosa*, *Shepherdia canadensis*, *Salix vestita*, and a dozen others which are seemingly fighting for supremacy. Beyond this thicket, in the woods that clothe the steep banks of the islands, are *Rhamnus alnifolia*, *Viola nephrophylla*, and *Pyrola asarifolia*, var. *incarnata*. The wet, dripping cliffs support *Dryas integrifolia*, *Cryptogramma Stelleri*, *Orchis rotundifolia*, *Calypso bulbosa*, *Tofieldia minima*, and festoons of *Saxifraga oppositifolia*. In a bog at the summit will be found *Salix candida* and *Scirpus hudsonianus*.

East of Mingan islands are many gravel beaches and wooded hill-sides, and steep wet cliffs comparable with those of Mingan islands, but they are not clothed with the same plants. These, indeed, do not occur nearer than Bradore bay, where great, flat tablelands, quite different from the white limestones of Mingan islands, are formed of coarse, limy sandstones and pure limestone. Along the meadowy brooksides are once more found *Salix candida*, *S. vestita*, *Scirpus hudsonianus*, and on the slopes of the tablelands *Cryptogramma Stelleri*, and *Potentilla fruticosa*.

Mingan islands and Bradore bay are 300 miles apart and Bradore bay has by far the colder climate, but they have 25 typical calcicoles in common. Each of these areas has other plants in common, bringing the total up to 83 species. The following list enumerates the species restricted to the limestones on which find their greatest development thereon, in the latter case being marked "(indifferent)"

LIST OF REPRESENTATIVE CALCICOLES

<i>Woodsia alpina</i>	<i>Poa alpina</i>
<i>Thelypteris fragrans</i>	<i>P. alpina</i> , var. <i>Buonæ</i>
<i>T. Robertiana</i>	<i>Glyceria nervata</i> , var. <i>strata</i>
<i>Asplenium viride</i>	<i>Scirpus hudsonianus</i>
<i>Cryptogramma Stelleri</i>	<i>Carex gynocrates</i>
<i>Botrychium Lunaria</i>	<i>C. aurea</i>
<i>Equisetum scirpoides</i>	<i>C. Halleri</i>
<i>Selaginella selaginoides</i>	<i>C. atrata</i> , var. <i>ovata</i>
<i>Potamogeton filiformis</i> , var. <i>borealis</i> (indifferent)	<i>C. vaginata</i> (indifferent)
<i>Milium effusum</i>	<i>C. eburnea</i>
<i>Muhlenbergia racemosa</i> (indifferent)	<i>C. concinna</i>
<i>Phleum alpinum</i> (indifferent)	<i>C. flava</i> (indifferent)
<i>Trisetum spicatum</i> , var. <i>pilosolum</i>	<i>C. flava</i> , var. <i>elutior</i>
	<i>C. Oederi</i> , var. <i>pumila</i> (indifferent)

¹ "The presence or absence of lime is the most important particular in which petrology affects the distribution of plants." Præger, R. L., "Irish topographical botany," xxvi (1901)

LIST OF REPRESENTATIVE CALCICOLES—Continued

<i>C. capillaris</i> (indifferent)	<i>Potentilla pectinata</i>
<i>C. capillaris</i> , var. <i>elongata</i>	<i>P. fruticosa</i>
<i>Juncus triglumis</i>	<i>Geum macrophyllum</i>
<i>Luzula parviflora</i> , var. <i>melanocarpa</i>	<i>G. rivale</i>
<i>Tofieldia minima</i>	<i>Dryas integrifolia</i>
<i>T. glutinosa</i>	<i>Alchemilla vulgaris</i> , var. <i>filiculis</i>
<i>Zigadenus chloranthus</i>	<i>Rhamnus alnifolia</i>
<i>Cypripedium parviflorum</i>	<i>Viola nephrophylla</i>
<i>Orchis rotundifolia</i>	<i>Shepherdia canadensis</i>
<i>Microstylis monophyllos</i>	<i>Epilobium latifolium</i>
<i>Calypso bulbosa</i>	<i>Myriophyllum exallescens</i>
<i>Salix candula</i>	<i>Pyrola minor</i> (indifferent)
<i>S. vestita</i>	<i>P. secunda</i> , var. <i>obtusata</i>
<i>S. vestita</i> , var. <i>psilophylla</i>	<i>P. asarifolia</i>
<i>Ranunculus abortivus</i>	<i>P. asarifolia</i> , var. <i>incanata</i>
<i>Thalictrum confine</i>	<i>Arctostaphylos Uva-ursi</i>
<i>Anemone canadensis</i>	<i>A. Uva-ursi</i> , var. <i>coarctata</i>
<i>Caltha palustris</i>	<i>A. Uva-ursi</i> , var. <i>adenotricha</i>
<i>Draba megasperma</i>	<i>A. rubra</i>
<i>Erysimum asperum</i>	<i>Androsace septentrionalis</i>
<i>Arabis alpina</i>	<i>A. septentrionalis</i> , var. <i>robusta</i>
<i>A. Drummondii</i>	<i>Gentiana microphylla</i>
<i>Saxifraga aizoides</i>	<i>G. Amarilla</i>
<i>S. Aizoon</i>	<i>Pinguicula vulgaris</i> (indifferent)
<i>S. oppositifolia</i>	<i>Solidago hispida</i>
<i>Parnassia parviflora</i>	<i>Senecio parviflorus</i>
<i>P. Kotzebuei</i>	<i>Taraxacum ceratophorum</i>
<i>Ribes hirtellum</i> , var. <i>calicicola</i>	
<i>Fragaria virginiana</i> , var. <i>terre-novæ</i> (indifferent)	

PLANTS INDIFFERENT TO THE CHEMICAL NATURE OF THEIR HABITATS

Certain species of plants—108 in number—are met with on all, or nearly all, the various types of soil or habitat in the region, and seem to grow with equal readiness on granitic or calcareous soils, or sometimes in brackish habitats. The weeds are evidently either indifferent or nearly indifferent to the nature of their habitat. It is easy to see how such adaptability helps to make them successful weeds.

LIST OF REPRESENTATIVE INDIFFERENT PLANTS

<i>Cystopteris fragilis</i>	<i>J. horizontalis</i>
<i>Thelypteris spinulosa</i>	<i>Sperganium angustifolium</i>
<i>T. Phegopteris</i>	<i>Potamogeton ephedrus</i>
<i>T. Dryopteris</i>	<i>P. pusillus</i>
<i>Athyrium angustum</i> , var. <i>rubellum</i>	<i>Phileum pratense</i>
<i>Equisetum arvense</i>	<i>Agrostis hyemalis</i> , var. <i>geminata</i>
<i>E. sylvaticum</i> , var. <i>pauciramosum</i> , f. <i>multiramosum</i>	<i>Calamagrostis canadensis</i>
<i>E. palustre</i>	<i>C. Langsdorffii</i>
<i>E. limosum</i>	<i>C. neglecta</i>
<i>Taraxacum canadensis</i>	<i>Cinna latifolia</i>
<i>Larix laricina</i>	<i>Trisetum sphegatum</i> , var. <i>Maidenii</i>
<i>Picea canadensis</i>	<i>Poa nemoralis</i>
<i>Abies balsamea</i>	<i>P. palustris</i>
<i>Juniperus communis</i> , var. <i>montana</i>	<i>Glyceria nervata</i>
	<i>Festuca rubra</i>
	<i>Agropyron caninum</i> , var. <i>Hornemannii</i>

LIST OF REPRESENTATIVE INDIFFERENT PLANTS—*Continued*

<i>Scirpus rubrotinctus</i>	<i>Sedum roseum</i>
<i>Carex aquatilis</i>	<i>Saxifraga cespitosa</i>
<i>Luzula parviflora</i>	<i>Mitella nuda</i>
<i>L. campestris</i> , var. <i>frigida</i>	<i>Ribes prostratum</i>
<i>Smilacina stellata</i>	<i>Pyrus americana</i>
<i>Streptopus amplexifolius</i>	<i>Amelanchier Bartramiana</i>
<i>S. roseus</i>	<i>Potentilla monspeliensis</i>
<i>Iris versicolor</i>	<i>P. monspeliensis</i> , var. <i>norvegica</i>
<i>I. setosa</i> , var. <i>canadensis</i>	<i>Rubus arcticus</i>
<i>Sisyrinchium angustifolium</i>	<i>R. arcticus</i> , var. <i>grandiflorus</i>
<i>Habenaria dilatata</i>	<i>R. pubescens</i>
<i>Spiranthes Romanzoffiana</i>	<i>Trifolium repens</i>
<i>Salix lucida</i>	<i>Vicia Cracca</i>
<i>S. lucida</i> , var. <i>intonsa</i>	<i>Callitriche palustris</i>
<i>S. pellita</i>	<i>Viola incognita</i>
<i>Betula pumila</i>	<i>Epilobium angustifolium</i>
<i>Alnus crispa</i> , var. <i>mollis</i>	<i>E. alpinum</i>
<i>A. incana</i> , var. <i>glauca</i>	<i>Hippuris vulgaris</i>
<i>Urtica Lyallii</i>	<i>Aralia nudicaulis</i>
<i>Rumex Britanica</i>	<i>Hieracium lanatum</i>
<i>Polygonum viviparum</i>	<i>Comoselinum chinense</i>
<i>Sagina procumbens</i>	<i>Cornus canadensis</i>
<i>S. nodosa</i>	<i>C. stolonifera</i>
<i>Arenaria lateriflora</i> , var. <i>typica</i>	<i>Primula farinosa</i> , var. <i>macropoda</i>
<i>A. horea</i>	<i>P. farinosa</i> , var. <i>incana</i>
<i>Stellaria borealis</i> , var. <i>isophylla</i>	<i>Halenia deflexa</i>
<i>S. longipes</i>	<i>Galeopsis Tetralix</i> , var. <i>bifida</i>
<i>S. media</i>	<i>Rhynanthus Kyrollæ</i>
<i>Cerastium arvense</i>	<i>Utricularia vulgaris</i> , var. <i>americana</i>
<i>Ranunculus acris</i>	<i>Galium labradoricum</i>
<i>Thalictrum polygamum</i>	<i>Lamæa borealis</i> , var. <i>americana</i>
<i>Actæa rubra</i>	<i>Viburnum pauciflorum</i>
<i>Draba incana</i>	<i>Campanula rotundifolia</i>
<i>D. incana</i> , var. <i>confusa</i>	<i>Solidago macrophylla</i>
<i>D. arabisans</i>	<i>S. humilis</i>
<i>D. arabisans</i> , var. <i>orthocarpa</i>	<i>Aster foliaceus</i>
<i>Thlaspi arvense</i>	<i>A. umbellatus</i>
<i>Capsella Bursa-pastoris</i>	<i>Toraxacum officinale</i>
<i>Barbarea orthoceras</i>	

COMPARATIVE NOTES AS TO SOIL PREFERENCES OF CERTAIN PLANTS

More than sixty years ago, De Candolle¹ pointed out that the data regarding vegetation on the soils of one country should be compared with similar data in other countries.

As 50 per cent of the species known along the north shore of the gulf of St. Lawrence have a circumpolar distribution, occurring also in northern Europe, the Alps, or northern Asia, this flora seems a very appropriate one to use in just such a comparison as is suggested by De Candolle. In order to do this the ninety-eight articles or books listed were perused. Most of them, as will be seen, are by European workers. It was felt that data

¹ De Candolle, Alphonse, "Géographie Bot. Raisonnée", i, 428 (1855).

observed upon the same plants at a far distant part of their range would be more instructive than a mass of it gathered at other points near at hand. Consequently no effort was made to find and include the much less numerous American and Canadian works. Any statements in these publications regarding the habitats of any of the plants in the flora now under consideration, were noted, with due caution concerning difficult groups where there might be a confusion of identities. Striking out the species of which the soil preferences were imperfectly known along the coast of Saguenay county, and those concerning which only a few published notes were found, there remained 103 species, which are listed below. Under each is a statement of its habitat in the region here considered, and then the notes culled from published works. These notes are often translated into equivalent English scientific terms, but always, it is believed, with justice to the author quoted. After each of these notes is given a number which refers to the "List of Phytogeographical Articles," (page 38). After this number is given, in roman numerals, the number of the volume (if necessary) and the page.

The various authors, from whom these notes have been drawn, have often used very different terms which are nearly or exactly equivalent in meaning. To make their significance quite clear, they are arranged in the condensed glossary below.

GLOSSARY OF SPECIAL PHYTOGEOGRAPHICAL TERMS

Calcareous, having the qualities of, or containing lime

Calicole, growing upon limestone, or a calcareous soil, also a plant growing upon a calcareous soil

Calcifuge, shunning lime

Calciphile, lime-loving. In usage is equivalent to calcicolous or calcicole

Chasmophyte, a plant that grows in rock crevices

Halophilous, growing only within the influence of salt water

Halophyte, a plant growing only within the influence of salt water

Hydrophilous, water-loving, applied to plants which grow in or near the water

Hydrophyte, a water-plant

Hygrophilous, moisture-loving

Hygrophyte, a marsh-plant

Indifferent, used to designate plants which grow equally well on all or nearly all types of soil. When used to modify another term, as *indifferent calcicole*, it signifies that the plant usually but not always grows on a calcareous soil

Lithophyte, a plant growing upon the surface of a rock, as some lichens. By some authors used to designate chasmophytes or plants which grow among rocks or on a rocky soil

Oxylophyte, a plant growing only in sour or acid soils

Pelophilous, clay-loving, growing on clay

Psammophilous, sand-loving, growing on sand

Psammophyte, a plant growing only upon sands

Ruderal, growing in waste places, or among rubbish

Siliceous, consisting of or abounding in silica.

Silicole, a plant growing only on highly siliceous soil.

Silicolous, growing upon siliceous soils.

CERTAIN SPECIES WITH A COMPARISON OF THEIR HABITATS
ALONG THE NORTH SHORE OF THE GULF OF ST.
LAWRENCE AND IN OTHER REGIONS,
ESPECIALLY EUROPE

Cystopteris fragilis (L.) Bernh

On shaded rocks, ind.¹, lithophyte, ind., 15 ii, p. 299, silicolous hydrophyte, 51 ii, p. 79, ind. hydrophyte, 51 ix, p. 353, on limestone, 36 p. 170, on limestone, 29 p. 158.

Thelypteris spinulosa (O. F. Muell.) Nieuwl

Ind.; ind., 15 ii, p. 299, silicolous, 51 ii, p. 74 and ix, p. 351, ind., 34 p. 126, on clay poor in lime, 85 p. 82

T. Phegopteris (L.) Slosson

Ind., ind., a little hygrophilous, 15 ii, p. 299, ind. calcifuge, 47 p. xlii, silicolous, 65 p. 227, on damp siliceous soils, 85 p. 129, silicolous, 51 ii, p. 74 and ix, p. 344, silicolous, 65 p. 227, silicolous, 60 p. 113

T. Dryopteris (L.) Slosson

Ind., on Scotch pine heath, 85 p. 119, on damp siliceous soils, 85 p. 129, silicolous 51 ii p. 74 and ix, p. 345, on granite mountains 60 p. 113, ind., slightly hygrophilous, 15 ii, p. 299, on limestone, 36 p. 170, calcifuge, 48 p. 254, silicolous, 73 p. 84

T. Robertiana (Hoffm.) Christensen.

Calcicole, calcicole, 85 p. 153, on chalk grassland, 85 p. 178, calciphile, 30 p. 230, calciphile, 29 p. 158, calciphile, 48 p. 254.

Asplenium viride L.

Calcicole, confined to calcareous soils, 15 xx, p. 275 and ii, p. 292, calciphile, 36 p. 170, calciphile, 73 p. 84; calciphile, 9 p. 209, on limestone or granite, 65 p. 226; calcicole, 85 p. 161, calciphile, 90 p. 273, calciphile, 30 p. 230, calciphile, 10 p. 328, calciphile, 80 p. 411, calciphile, 29 p. 158

Botrychium Lunaria L.

Calcicole, ind., somewhat zerophytic, 15 ii, p. 299, silicolous, 51 ii, p. 74 and ix, p. 334, calciphile, 1 p. 523, ind., 34 p. 126, ind., 65 p. 226.

Equisetum arvense L.

Ind., ind., usually on clay, 15 ii, p. 299, on clay, 90 p. 161, hydrophyte, ind., 51 ix, p. 307, ind., 34 p. 126, ind., 65 p. 225, psammophyte, 83 p. 118, calciphile, 10 p. 327.

E. sylvaticum L.

Ind.; ind. calcifuge, 15 ii, p. 301; on damp siliceous soils, 85 p. 129; hydrophytic silicole, 51 ii, p. 79, hydrophyte, ind., 51 ix, p. 308; silicolous, 65 p. 225

E. palustre L.

Ind., ind. calcifuge, hydrophyte, 15 ii, p. 301; on wet clay poor in lime, 85 p. 87, ind. hydrophyte, 51 ix, p. 310; ind. hydrophyte, 65 p. 225; oxylophyte, on low moor rich in Ca and K, but acid, 96 p. 197; ind., 34 p. 126, hydrophyte, 23 p. 439.

¹ Ind. = Indifferent.

E. limosum L.

Ind ; on wet clay poor in lime, 85 p 87; ind hydrophyte, 51 ix, p. 311; ind , 34 p. 126

Lycopodium Selago L.

Oxylophyte, on siliceous soils, 15 xx, p 289, ind., somewhat hygrophilous, 15 ii, p. 299, siliculous, 51 ii, p 74 and ix, p. 323; siliculous, 34 p 169; siliculous, 65 p. 228, on mica slate, 83 p 118, on primitive rocks, 8 p 375, in acid bogs, 71 p. xxxi

L. annotinum L.

Oxylophyte, ind , 15 ii, p 299, siliculous, 34 p 169, siliculous, 65 p. 228, on mica slate, 83 p 118

L. clavatum L.

Oxylophyte, ind calcifuge, somewhat hygrophilous, 15 ii, p. 301; ind. calcifuge, 47 p xlii, siliculous, 51 ii, p 74 and ix, p 325, silicole, 34 p. 169, on mica slate, 83 p 118, on primitive rocks, 8 p. 375

Selaginella selaginoides (L.) Link

Calcicole, calcicole, in swamps, 85 p 158, ind calciphile, 90 p 271; calciphile, 29 p 158

Potamogeton natans L.

Hydrophyte; ind hydrophyte, 15 ii, p 299, calcicolous hydrophyte, 51 ii, p 80, hydrophyte, preferring muddy and calcareous waters, 51 viii, p 457, in alkaline waters, 34 p 149, hydrophyte of calcareous waters, 65 p 211

Zostera marina L.

Halophyte, pelophilous halophyte, 96 p 230, halophyte, of mud flats, 85 p 332, halophyte, 23 p 435, halophyte, 84 p 404

Zannichellia palustris L.

Ind halophyte; submaritime, 15 ii, p 291, ind calcifuge, hydrophile, 15 ii, p 301, calcicolous hydrophyte, 51 ii, p 80

Triglochin palustris L.

Ind. halophyte; oxylophyte, 96 pp 197 and 202, ind. 15 ii, p 298; on wet clay poor in lime, 85 p. 87, on submaritime fen, 85 p 244; halophyte, 51 ii, p 82 and viii, p 443

T. maritima L.

Ind halophyte, maritime hygrophyte, 15 ii, p 290, halophyte, 51 ii, p 82, psammophilous halophyte, 23 p 436, pelophilous halophyte, 96 p. 231, halophyte, 74 iv, p 54, on submaritime fen, 85 p 244; halophyte, of muddy marshes, 85 pp 332 and 333, halophyte, 51 viii, p. 441; halophyte, 34 p 115; halophyte, 83 p 115

Scheuchzeria palustris L.

Oxylophyte; oxylophyte of high moors, 96 pp 195 and 202, siliculous hydrophyte, 51 ii, p 78, on peat bogs, 34 p. 151, on peat bogs in granitic regions, 65 p. 210, ind , 63 p. 418, on *Sphagnum* bogs in granitic regions, 49 p. 39.

Phleum pratense L.

Ind ; ind., 15 xx, p 299, on damp clays poor in lime, 85 p 85, on chalk grassland, 85 pp 178 and 179; ind , 51 ix, p. 160; ind , 34 p. 126, ind , 65 p 220; ind., 4 p. 121.

Scirpus hudsonianus (Michx.) Fernald

Calcicole, silicolous hydrophyte, 51 n, p 79, silicolous, 63 p 417

Eriophorum angustifolium Roth

Hydrophilous oxylophyte, on wet heaths, 85 p 106, on fens, 85 p 233, *Sphagnum* moor, 85 pp 263 and 267, on cotton-grass moors, 85 p 270, in bog holes in heather moor, 85 p 279, ind calcifuge, 47 p xlii, hydrophytic silicole, 51 n, p 79 and ix, p 75, on peat bogs, 34 p 151, ind, hydrophyte, 65 p 217, on acid bogs, 71 p xxi, *Sphagnum* bogs on granite, 49 p 39

Rhynchospora alba (L.) Vahl

Hydrophilous oxylophyte, oxylophyte of high moors, 96 p 202, confined to siliceous soils, 15 xx, p 274, hydrophilous calcifuge, 15 n, p 302, on wet heaths, 85 p 106, moor, 85 p 249, on *Sphagnum* moor, 85 pp 263 and 267, moor, 90 p 283, hydrophytic silicole, 51 n, p 78 and ix, p 52, hydrophytic silicole, 34 p 168, hydrophyte, 65 p 218, on peat bogs, 83 p 115, on acid bogs, 71 p xx

Carex pauciflora Lightf

Oxylophyte, oxylophyte, 96 p 194, calcifuge, 15 n, p 303, exclusive calcifuge, 47 p xli, hydrophytic silicole, 51 n, p 79 and ix, p 82, on peat bogs, 34 p 151, peat bogs on granite, 65 p 218, on potassic soils, 29 p 160

C. limosa L

Hydrophilous oxylophyte, oxylophyte, 96 p 195, hydrophytic silicole, 51 n, p 79 and ix, p 101, on peat bogs, 34 p 151, hydrophytic silicole, 65 p 219, on acid bogs, 71 p xxi, calcifuge, 15 p 303, on reed swamps in moors, 85 p 262, calcifuge, 47 p xli, on moors, 90 p 282, on *Sphagnum* bog on granite, 49 p 39

C. capillaris L

Ind calcicole, calciphile, 13 p 314, ind calciphile, 30 p 230, calciphile, 77 p 100, ind calciphile, 90 p 281, calciphile, 79 p 319

Calla palustris L

Hydrophilous oxylophyte, hydrophytic calcifuge, 15 n, p 302, in boggy woods or moors, 90 p 287, hydrophytic silicole, 65 p 212

Juncus bufonius L

Ind oxylophyte, ind, on wet clay or sand, 15 n, p 299, hydrophytic silicole, 51 n, p 78 and ix, p 22, hydrophytic silicole, 61 p 86, ind, 65 p 216, ind, 4 p 121

J. trifidus L

Oxylophyte, on lichen heath on tundra, 96 p 209, on potassic soils, 29 p 160, calciphobous, 77 p 104, on mica schist, 92 p 26, silicolous, 63 p 417, calcifuge, 48 p 251, silicolous, 9 p 219, on primitive rocks in the mountains, 76 p 146

J. filiformis L

Oxylophyte, hydrophytic silicole, 51 n, p 78 and ix, p 16, silicolous, 34 p 168, silicolous, 65 p 216, on granite, 63 p 411, ind, 63 p 417, on granite, 34 p 111, silicolous, 56 p 14, on *Sphagnum* bog on granite, 49 p 39, on potassic soils, 29 p 160

Streptopus amplexifolius (L.) DC

Ind, silicolous, 65 p 214, ind, 63 p 418, ind, 15 n, p 298, calciphile, 90 pp 172 and 291, ind, 51 viii, p 560

Agrostis alba L., var. *maritima* (Lam.) G. F. W. Mey

Psammophilous halophyte, psammophilous halophyte, 96 p 231, psammophilous halophyte, 23 p 436

Deschampsia flexuosa (L.) Trin

Oxylophyte, confined to siliceous soils, 15 xx, p 274, calcifuge, 15 ii, pp 303 and 224, on dry grass heaths on sand, 85 p 96, on lichen heath or tundra, 96 p 209, on heath, 85 pp 105 and 116, on Scotch pine heaths, 85 p 119, on siliceous grassland, 85 p 135, on heather moor, 85 p 278, in sandy coniferous woods, 90 p 275, on *Sphagnum* moors, 77 p 102, on acid humus, 77 p 111, exclusive calcifuge, 47 p xli, siliculous, 51 ii, p 73 and ix, p 198, siliculous, 61 p 87, ind., 65 p 221, on granite, 63 p 411, siliculous, 8 p 376, siliculous, 4 p 119

Spartina alterniflora Loisel

Halophyte, maritime pelophilous hydrophyte, 15 ii, p 290, halophyte, 85 p 337

Catabrosa aquatica (L.) Beauv

At the semi-fresh, springy borders of salt marshes, fresh marsh, 85 p 207, ind., 34 p 126, ind., 65 p 223

Poa annua L

Ind., ind., 15 ii, p 299, on shingle beaches, 85 p 361, ruderal, 51 ii, p 81, ind., 51 ix, p 232, ind., 34 p 126, ind., 65 p 222, ind., 4 p 121

P. alpina L

Calcicole, ind., 15 ii, p 299, siliculous, 51 ii, p 73 and ix, p 234, on mica and calcareous schists, 92 p 28, on slate mountains, 40 p 93, calcicole, 1 p 537, ind., 63 p 416, calciphile, 10 p 327, calciphile, 80 p 411, ind. calciphile, 29 p 159

P. pratensis L

Ind., ind., 15 ii, p 299, ind., 51 ix, p 241, ind., 65 p 222, ind., 34 p 126

Festuca rubra L

Ind., ind. calcifuge, somewhat psammophilous, 15 ii, p 301, on maritime dunes, 85 p 344, siliculous, 51 ii, p 73, preferential silicle, 51 ix, p 265, ind., 65 p 223, often a pelophilous halophyte, 96 p 231, on dry sand-fields, 96 p 266, ind., 34 p 126, ind., 4 p 121

Eleocharis palustris (L.) R. Br

Ind., hydrophyte, ind., 15 ii, p 299, on wet clay poor in lime, 85 p 87, in reed swamp poor in salts, 85 p 194, siliculous hydrophyte, 51 ii, p 78, ind., 34 p 125, in alkaline waters, 34 p 150, hydrophyte, 65 p 217

Scirpus cespitosus L

Oxylophyte, oxylophyte of high moors, 96 pp 194 and 202, on wet heath, 85 p 106, on siliceous grassland, 85 p 136, on cotton-grass moor, 85 p 271, on upland moor, 85 p 272, on heather moor, 85 p 278, calcifuge, hygrophilous psammophyte, 15 ii, p 303, on moors, 90 p 283, hydrophytic silicle, 51 ii, p 78 and ix, p 58, on peat bogs, 34 p 151, on acid rocks, 56 p 12, on peat bogs on granite, 65 p 217, ind., 63 p 417, in acid bogs, 71 p xxxi, on potassic soils, 29 p 159

Listera cordata (L.) R. Br.

Oxylophyte; on siliceous soils, 85 p. 139; on heather moors, 85 p. 278; in mossy coniferous woods, 90 p. 289; in mossy coniferous woods, almost parasitic, 51 viii, p. 524; ind. calciphile, 63 p. 418; ind., 34 p. 125

Salix phylicifolia L.

Ind. oxylophyte; silicolous, 51 viii, p. 381; ind., 63 p. 418; on potassic soils, 29 p. 160.

Myrica Gale L.

Oxylophyte, *Sphagnum* bogs (high moor), 96 p. 202, calcifuge, 15 ii, p. 302, in woods on siliceous soils, 85 p. 139, silicolous, 56 p. 16

Rumex Acetosella L.

Ind. oxylophyte, ind, 60 p. 104; silicolous, 4 p. 119, calcifuge, 47 p. xli, on sandy places, 90 p. 300, silicolous, 51 ii, p. 72 and viii, p. 233, silicolous, 34 p. 168, silicolous, 9 p. 209; ind. silicole, 61 p. 84, ind, 65 p. 205, calcifuge, 15 xx, p. 274 and ii, p. 302, on potassic soils, 74 iv, p. 53, on dry grass heath on sand, 85 p. 96, it tolerates more lime than most calcifuges, 15 ii, p. 256, siliceous soils, 85 p. 129.

Polygonum aviculare L.

Ind, ind, 15 ii, p. 298, ind, 51 viii, p. 248.

P. viviparum L.

Ind, ind, 15 xx, p. 289 and ii, p. 298; silicolous, 51 ii, p. 72 and viii, p. 239; on limestone, 83 p. 139, ind, 63 p. 418.

P. lapathifolium L.

Ind, ind, 15 ii, p. 298, ind. and hydrophytic, 51 viii, p. 242, ind, 34 p. 124

P. Convolvulus L.

Ind, ind, 15 ii, p. 298, ind, 51 ii, p. 60 and viii, p. 251.

Salsola Kali L.

Psammophilous halophyte, psammophilous halophyte, 96 p. 226, maritime psammophyte, 15 ii, p. 290, halophile, 74 iv, p. 54, sea strand, 85 p. 340, halophyte, 51 ii, p. 81 and viii, p. 193, halophyte, 56 p. 13

Sagina procumbens L.

Ind, ind, 15 ii, p. 294, on dry grass heath on sand, 85 p. 95, hydrophytic preferential silicole, 51 v, p. 264, hydrophytic silicole, 61 p. 84, silicolous, 60 p. 79, ind, 34 p. 120, ind. and hydrophytic, 65 p. 103, silicolous, 4 p. 119

Arenaria peplodes L.

Psammophilous halophyte, psammophilous halophyte, 96 p. 226; maritime psammophyte, 15 ii, p. 289, on sea strands, 85 p. 340

Stellaria media (L.) Cyrill

Ind, ind., 15 ii, p. 294, ind., 51 v, p. 292, ind, 65 p. 164, ind. 70 p. 125

Cerastium arvense L.

Ind, ind. calciphile, 15 ii, p. 293, on dry grassland on sand, 85 p. 95; calcicolous, 85 p. 176, ind, 51 v, p. 309, on slate mountains, 40 p. 93; ind., 34 p. 120, ind., 4 p. 120.

C. vulgatum L.

Ind., ind., 15 ii, p. 294; on slate mountains, 40 p. 93, ind., 65 p. 164, ind, 34 p. 120

Silene acaulis L.

Oxylophyte; chasmophyte, 96 p 244, on granite in the Alps, 13 p. 358, on mica and calcareous schists, 92 p 28, calciphile, 36 p. 168, calciphile, 9 p 196, on limestone and slate, 76 p 109, ind, 63 p. 425, calciphile, 10 p 327, ind, 70 p 124, on potassic soils, 29 p. 161

Ranunculus repens L.

Ind, on dry clay poor in lime, 85 p 85, wet clay, 90 p 359, ind., 51 iv, p 477, ind, 65 p 156, ind, 70 p 114

R. acris L.

Ind, ind., 15 ii, p 295, on dry clay poor in lime, 85 p 85, on chalk grassland, 85 p 176, ind, 51 iv, p 473, on pastures in slate mountains, 40 p 92, ind, 70 p 114, ind, 31 p 120, ind, 65 p 156

Caltha palustris L.

Calcicole, ind and hydrophytic, 15 p 294, on the low moor (rich in Ca and K, but acid), 96 p 197, on damp siliceous soils, 85 p 128, calcicole, 85 p 158, hydrophytic silicole, 51 ii, p 76, ind, hydrophytic and to some degree a calcifuge, 51 iv, p 489, ind, 70 p 114, ind, 34 p 120, hydrophyte, 65 p 157

Thlaspi arvense L.

Ind, ind calciphile, 15 ii, p 57, ind, 51 ii p 57, preferential calciphile, 51 v, p 117

Capsella Bursa-pastoris (L.) Moench

Ind, ind, 15 ii, p 294, ruderal, 90 p 346, ruderal, 51 ii, p 80, ind, 51 v, p 137, ind., 65 p. 159, ind, 70 p 120, ind, 31 p 120

Arabis alpina L.

Calcicole, preferential silicole, 51 v, p 48, on calcareous schists, 92 p. 27, calciphile, 40 p 128, on calcareous and micaceous schists, 76 p 97, ind, 63 p 425, calciphile 29 p 161, on the calcareous fell-fields of the European mountains, 96 p 258, calciphile, 15 xx, p 275, and ii, p 291, on limestone mountains, 76 p 148, calciphile, 79 p 299

Drosera rotundifolia L.

Hydrophilous oxylophyte, confined to siliceous soils, 15 xx, p 274, *Sphagnum* moor, 85 p 263, in bog holes in the heather moor, 85 p 279, hydrophytic silicole, 51 ii, p 77, hydrophyte, a preferential silicole, 51 v, p 197, on peat bogs, 34 p 151, silicolous, 65 p 162, ind, 63 p 425, hydrophytic silicole, 8 p 376, on acid bogs, 71 p xxxi, *Sphagnum* bogs on granite, 50 p 39, silicolous, 4 p 119

D. anglica Huds.

Hydrophilous oxylophyte, peat bog, 34 p 151, on bogs on granite, 65 p 162, on secondary rocks, 8 p 380, on acid bogs, 71 p xxx

D. longifolia L.

Hydrophilous oxylophyte, on wet heaths, 85 p 106, on *Sphagnum* moor, 85 p 263, hydrophytic silicole, 51 ii, p. 77, hydrophyte, preferential silicole, 51 v, p 198, on peat bogs, 34 p 151, ind, 63 p 425, hydrophytic silicole, 8 p. 376, on acid bogs, 71 p xxxi

Sedum villosum L.

Oxylophyte, calcifuge, 15 ii, p 303, calcifuge, 47 p xl, hydrophytic silicole, 51 ii, p 77, and vi, p. 198, on granite mountains, 60 p 89, silicole, 4 p. 119, on granite, 34 p. 110, on wet granite rocks, 65 p 176, ind, 63 p. 423

S. roseum (L.) Scop.

Ind.; chasmophyte, 96 p. 245; ind calcifuge, and lithophyte, 15 ii, p. 300, on granite in Alps, 13 p 358; on potassic rocks, 90 p 181, on clay slates, 90 p 194, calciphile, 36 p 168, on granite rocks, 65 p. 176; ind. silicole, 63 p. 423, on granite, 34 p. 110.

Saxifraga aizoides L.

Calcicole, ind, somewhat hydrophytic, 15 ii, p 295; calciphile, 30 p 231, ind., 63 p 422, calciphile, 10 p 327; calciphile, 29 p. 161.

S. aizoon Jacq.

Calcicole, ind. calciphile, 15 ii, p 293, preferential calciphile, 90 p. 337, silicole, 51 ii, p 69, on granites of the Gothard, 87 i, p 352; ind, 51 vi, p. 234, on limestone, and mica slate, 83 p 139; ind. calciphile, 63 p 422; calciphile, 79 p 307, chasmophyte, 96 p 244; calciphile, 29 p 161, ind calciphile, 90 p 174, on micaceous and calcareous schists, 92 pp. 26 and 28, on granite, 65 p 177, calcifuge, 47 p. xlii

S. oppositifolia L.

Calcicole, chasmophyte, 96 p 244, calciphile, 13 p. 313; calciphile, 90 pp 180 and 336, calciphile, 36 p 168, calciphile, 9 p. 196; calciphile, 30 p 231, calcicole in the Carpathians according to Wahlenberg, ind in Switzerland according to H Christ, 77 p. 100; on micaceous and calcareous schists, 92 p. 28, ind, 83 p 138, calciphile, 84 p 125, ind, 63 p 422, calciphile, 29 p 161.

Potentilla palustris (L.) Scop

Hydrophilous oxylophyte, on low moors (rich in Ca and K, but acid) 96 p 197, in ditches, 90 p 363, in peat bogs, 34 p. 151, silicolous, 60 p 86, on potassic soils, 29 p 161, calcifuge, hydrophytic psammophyte, 15 ii, p 301, edge of moor, 85 p. 251, silicolous, 34 p 166; hydrophytic silicole, 65 p 171

P. fruticosa L.

Calcicole, calciphile, 70 p 140, calciphile, 64 p. 114

Geum rivale L.

Calcicole, ind, 15 ii, p 295, on low moors (rich in Ca and K, but acid) 96 p. 197, on damp siliceous soils, 85 p. 128, calciphile, 85 pp 150 and 158, ind, calcifuge, 47 p xlii, on wet moors, 90 p 363, hydrophytic silicole, 51 ii, p. 77 and v, p 21, silicole, 65 p 170; on *Sphagnum* bogs on granite, 49 p. 39

Rubus Chamæmoris L.

Oxylophyte, oxylophyte, 96 p. 196; on upland *Sphagnum* bogs, 85 p. 267, on potassic soils, 29 p 161

Trifolium pratense L.

Ind, calciphile or ind, 15 xx, p 286; ind, 15 ii, p 295, on dry clay poor in lime, 85 p 85, on chalk grassland, 85 p 176, on fixed dunes, 85 p 345; ind calcifuge, 51 v, p 497, on slate mountains, 40 p. 93, ind, 65 p. 168, ind, 34 p 121.

T. repens L.

Ind; ind, 15 ii, p 295, on dry clay poor in lime, 85 p. 85; on fixed dunes, 85 p. 345, ind., 51 ii, p. 57 and v, p. 522; on slate mountains, 40 p 93; ind, 65 p 168, ind, 4 p 120, ind, 34 p. 120.

Vicia Cracca L.

Ind ; ind , 15 ii, p 295, on chalk grasslands, 85 p 177; on clay poor in lime, 85 p 82; hydrophyte, ind , 51 v, p. 568, ind , 65 p. 169; ind , 51 ii, p. 57, ind , 4 p 120.

Empetrum nigrum L.

Oxylophyte; calcifuge, 15 ii, p 303, on sand dunes, 96 pp. 264 and 268, calcifuge, 85 p 157, silicolous, 51 ii, p 72 and viii, p 273, silicolous, 34 p. 166, silicolous, 56 p 16, on peat bogs on granite, 65 p 207; ind. silicole, 63 p 418, on mountains of primitive rocks, 76 p. 148, on granite, 49 p 39, on potassic soils, 29 p 161

Epilobium angustifolium L.

Ind.; ind , 15 ii, p 295, ind , 51 vi, p 119, ind , 65 p 174, ind., 63 p 423, ind., 79 p 305, silicole, 4 p 119, ind , 34 p 121, on gneiss, 83 p. 141.

E. palustre L.

Hydrophilous oxylophyte, calcifuge, 47 p xli, silicolous, 34 p. 166, silicolous, 65 p 174, on low moors (rich in Ca and K, but acid), 96 p 197, hydrophytic calcifuge, 15 xx, p 301, on damp siliceous soils, 85 p 128, hydrophytic silicolous, 51 vi, p 126, silicolous, 60 p 87, on *Sphagnum* bog on granite, 49 p 39

Circæa alpina L.

Ind oxylophyte, ind , hydrophytic, 15 ii, p 295, ind calcifuge, 47 p xlii, ind. silicolous, 51 vi, p 137, silicolous, 56 p 12, silicolous, 65 p. 174, ind , 63 p. 423.

Moneses uniflora (L.) Gray

Oxylophyte, ind , 15 ii, p 297, silicolous, 51 ii, p 71 and vi, p. 363, ind , 63 p 420, silicolous, 4 p 120

Pyrola minor L.

Ind calcicole, ind , 15 ii, p 297, on siliceous soils, 85 p 129, ind. calcifuge, 46 p. xlii, silicole, 51 ii, p. 71 and vi, p 358, on granite, 65 p. 193, on mica slate, 83 p 131, ind , 63 p 420.

Loiseleuria procumbens (L.) Desv.

Oxylophyte; when it thrives on calcareous mountains it is on deep raw acid humus, 96 p 213, silicolous, 9 p 209, ind , 63 p 420, ind , 79 p. 311.

Vaccinium uliginosum L.

Oxylophyte, on high moors (*Sphagnum* bogs), 96 p. 202, confined to siliceous soils, 15 xx, p 274, on *Sphagnum* moors, 77 p 102, hydrophytic silicole, 51 ii, p 78 and vi, p 335, on peat bogs, 34 p 151, silicolous, 56 p 14, silicole, 9 p 209; silicolous, 65 p 192, silicolous, 60 p. 98, ind , 63 p. 420, on granite, 49 p 39, on potassic soils, 29 p. 163.

V. Oxycoccus L.

Hydrophilous oxylophyte, oxylophyte, 96 pp. 194 and 202, calcifuge, 15 xx, p. 303, on wet heaths, 85 p 106, hydrophytic silicolous, 51 ii, p. 78, silicolous, 56 p. 14, silicole, 65 p 192; silicolous, 60 p. 98, hydrophytic silicolous, 8 p 377, on acid bogs, 71 p. xxx, on granite, 49 p 39

Diapensia lapponica L.

Oxylophyte, on acid rocks, oxylophyte, 96 p. 214, on potassic rocks, 29 p. 163.

Gentiana Amarella L.

Calcicole, on calcareous or siliceous grasslands, 85 pp. 177 and 179, and 135, calciphile, 10 p. 330, calciphile, 70 p. 13; calciphile, 29 p. 163.

Menyanthes trifoliata L.

Hydrophilous oxylophyte, ind. calcifuge, 47 p. xli, hydrophytic silicole, 51 ii, p. 78, on peat bogs, 34 p. 151, hydrophytic silicole, 65 p. 195, on *Sphagnum* bogs on granite, 49 p. 39, on potassic soils, 29 p. 163; on low moors (rich in K and Ca but acid), 96 p. 197; ind. calcifuge and hydrophyte, 15 ii, p. 300.

Mertensia maritima (L.) S. F. Grav.

Psammophilous halophyte, psammophilous halophyte, 96 p. 226; on shingle beaches, 85 p. 361.

Galeopsis Tetrahit L.

Ind., ind., 15 ii, p. 297, in cultivated places, 90 p. 331, ind., 51 viii, p. 63, ind. silicole, 61 p. 84, ind., 4 p. 121; ind., 34 p. 124.

Limosella aquatica L.

Hydrophyte and somewhat an oxylophyte, calcifuge, 15 ii, p. 303, hydrophytic silicole, 51 ii, p. 78, near alkaline waters, 34 p. 148, hydrophyte, 65 p. 198.

Plantago major L.

Ind., on grassy places, 90 p. 313, ind., 34 p. 124, ind., 65 p. 204.

Campanula rotundifolia L.

Ind., ind., 15 ii, p. 297, on siliceous soils, 85 p. 129, on chalk grassland, 85 pp. 177 and 179, ind., 90 p. 314, ind., 51 ii, p. 59 and vi, p. 308, on slate mountains, 40 p. 93, ind., 34 p. 123, on limestones, 36 p. 168, ind., 65 p. 192, silicolous, 8 p. 376.

Gnaphalium uliginosum L.

Ind. oxylophyte, on wet clay poor in lime, 85 p. 86, ind. calcifuge, 47 p. xli, ind., 65 p. 186, ind., 34 p. 122.

Achillea Millefolium L.

Ind., ind., somewhat xerophytic, 15 ii, p. 296, on dry grass heath on sand, 85 p. 96, on calcareous grassland, 85 pp. 159 and 177, ind., 51 ii, p. 58, ind., 34 p. 122.

Tanacetum vulgare L.

Ind., ind. calcifuge, 15 ii, p. 300, ind., 51 ii, p. 58, ind., 60 p. 93; ind. 79 p. 309, ind., 4 p. 120.

Senecio vulgaris L.

Ind., ind., 15 ii, p. 296, on sand dunes, 85 p. 349, ind. halophyte, 51 vi, p. 112, ind., 34 p. 122, ind., 65 p. 186.

Cirsium arvense (L.) Scop.

Ind., ind., 15 ii, p. 296, ind., 51 vi, p. 142.

Leontodon autumnalis L.

Ind., ind., 15 ii, p. 296, on dry clay poor in lime, 85 p. 86; on calcareous grassland, 85 pp. 159 and 177, ind., 51 ii, p. 59; ind., 65 p. 189; ind., 34 p. 123.

Taraxacum officinale Weber

Ind., ind., 15 ii, p. 296, on dry clay poor in lime, 85 p. 86, on chalk grassland, 85 p. 177, ind., 65 p. 190, ind., 63 p. 421.

The soil preferences of the 103 species of circumpolar range, here tabulated, may be briefly summarized as follows.

LIST OF CIRCUMPOLAR HALOPHYTES

<i>Zostera marina</i>	<i>Spartina alterniflora</i>
<i>Triglochin maritima</i>	

LIST OF CIRCUMPOLAR PSAMMOPHILOUS HALOPHYTES

<i>Agrostis alba</i> , var <i>maritima</i>	<i>A. peplodes</i> , var <i>diffusa</i>
<i>Salsola Kali</i>	<i>A. peplodes</i> , var <i>robusta</i>
<i>Arenaria peplodes</i>	<i>Merensia maritima</i>

LIST OF CIRCUMPOLAR INDIFFERENT HALOPHYTES

<i>Zannichellia palustris</i>	<i>Catabrosa aquatica</i>
<i>Triglochin palustris</i>	

LIST OF CIRCUMPOLAR CALCICOLFS

<i>Thelypteris Robertiana</i>	<i>Selaginella selaginoides</i>
<i>Asplenium viride</i>	<i>Potentilla fruticosa</i>

LIST OF CIRCUMPOLAR INDIFFERENT CALCICOLES

<i>Botrychium Lunaria</i>	<i>Arabis alpina</i>
<i>Polamogeton natans</i>	<i>Saxifraga aizoides</i>
<i>Poa alpina</i>	<i>S. Aizoon</i>
<i>Carex capillaris</i>	<i>S. oppositifolia</i>
<i>Thlaspi arvense</i>	<i>Gentiana Amarella</i>

LIST OF CIRCUMPOLAR OXYLOPHYTES

<i>Lycopodium Selago</i>	<i>Myrica Gale</i>
<i>L. annotinum</i>	<i>Drosera rotundifolia</i>
<i>L. clavatum</i>	<i>D. anglica</i>
<i>Scheuchzeria palustris</i>	<i>D. longifolia</i>
<i>Deschampsia flexuosa</i>	<i>Sedum villosum</i>
<i>Scirpus cespitosus</i>	<i>Potentilla palustris</i>
<i>Eriophorum angustifolium</i>	<i>Rubus Chamæmorus</i>
<i>Rhynchospora alba</i>	<i>Empetrum nigrum</i>
<i>Carex pauciflora</i>	<i>Epilobium palustre</i>
<i>C. limosa</i>	<i>Loiseleuria procumbens</i>
<i>Calla palustris</i>	<i>Vaccinium uliginosum</i>
<i>Juncus trifidus</i>	<i>V. Oxycoccus</i>
<i>J. filiformis</i>	<i>Drapensia lapponica</i>

LIST OF CIRCUMPOLAR INDIFFERENT OXYLOPHYTES

<i>Juncus bufonius</i>	<i>Circæa alpina</i>
<i>Listera cordata</i>	<i>Moneses uniflora</i>
<i>Sax. phylicifolia</i>	<i>Menyanthes trifoliata</i>
<i>Rumex Acetosella</i>	<i>Limosella aquatica</i>
<i>Sagina procumbens</i>	

LIST OF CIRCUMPOLAR INDIFFERENT PLANTS

<i>Cystopteris fragilis</i>	<i>Silene acaulis</i>
<i>Thelypteris spinulosa</i>	<i>Ranunculus repens</i>
<i>T. Phegopteris</i>	<i>R. acris</i>
<i>T. Dryopteris</i>	<i>Caltha palustris</i>
<i>Equisetum arvense</i>	<i>Capsella Bursa-pastoris</i>
<i>E. sylvaticum</i>	<i>Sedum roseum</i>
<i>E. palustre</i>	<i>Geum rivale</i>
<i>E. limosum</i>	<i>Trifolium pratense</i>
<i>Phleum pratense</i>	<i>T. repens</i>
<i>Poa annua</i>	<i>Vicia Cracca</i>
<i>P. pratensis</i>	<i>Epilobium angustifolium</i>
<i>Festuca rubra</i>	<i>Pyrola minor</i>
<i>Eleocharis palustris</i>	<i>Galeopsis Tetrahit</i>
<i>Scirpus hudsonianus</i>	<i>Plantago major</i>
<i>Streptopus amplexifolius</i>	<i>Campanula rotundifolia</i>
<i>Polygonum aviculare</i>	<i>Gnaphalium uliginosum</i>
<i>P. viviparum</i>	<i>Achillea Millefolium</i>
<i>P. lapathifolium</i>	<i>Tanacetum vulgare</i>
<i>P. convolvulus</i>	<i>Senecio vulgaris</i>
<i>Stellaria media</i>	<i>Cirsium arvense</i>
<i>Cerastium arvense</i>	<i>Leontodon autumnalis</i>
<i>C. vulgatum</i>	<i>Taraxacum officinale</i>

It will be seen that in most cases the various individual observations agree in a manner all the more surprising considering that the data have been gathered by many botanists at widely separated places and times. Of the plants listed there are few concerning which the data seem to be contradictory.

RELATION BETWEEN THE CHEMICAL NATURE OF THE SOIL AND THE DISTRIBUTION OF VASCULAR PLANTS

Cowles has recently stated that

"Blytt, De Candolle, and other students long ago called attention to the fact that close observation for many years in a region rich in various rock types would result in eliminating most of the so-called siliceous and calcareous plants and that most plants would be found in most soils. Even in the few exceptions to this rule a study conducted over the entire area occupied by a species would show that it grows naturally in most soils."¹

De Candolle in 1855 expressed a similar conviction.² But many other naturalists have arrived at exactly opposite conclusions. They claim that, although the relations between the natural distribution of the plant and the amount of available lime in the soil are complex, nevertheless they are definite enough and fundamental enough to deserve and repay years of careful study.

Lecoq defined in the following terms the conditions under which a study should be made: "It is impossible to refer each one of our species to one special soil from which no one individual may swerve. It is, therefore, necessary to consider only the whole of the species or perhaps the average and pay no attention to eccentricities."³

¹ Cowles, H. C., Bull. Am. Bur. Geog., 11, 167 (1901).

² De Candolle, A., "Géographie Botanique Raisonnée," 1, 422 (1855).

³ Lecoq, H., "Etudes sur la géographie botanique de l'Europe," 11, 51 (1854).

This statement of Lecoq's emphasizes the fact that in physiological ecology, exceptions do occur. We must bear this in mind, but we must not let it blind us. Because a single individual is once observed upon a siliceous soil, we must not forget that in every other known case, the species occurs on calcareous soils. Although our list contains a few species to which various workers assign irreconcilable soil preferences, we must remember that their observations on most of the species tally with surprising regularity.

Observations on the relations between the edaphic factors and the distribution of a species are not new, they have been frequent during the last century and a quarter. Various diametrically opposed theories have been advanced to explain the observed relations. In fact, for many years there has been a spirited controversy as to whether certain plants occurred on certain definite types of soil because of its physical properties, such as its ability to absorb moisture and heat, etc., or because of its chemical properties, as its content of NaCl or CaCO_3 . The question has simmered down to this: do plants within the same climatic zone depend more upon the physical or on the chemical nature of the soil?

The group of halophytes was one of the earliest to be recognized. It was noticed that they occurred in a narrow belt along the shore within the influence of sea water, and in the salt deserts or by salt springs and lakes in the interior of continents. That their distribution and their distinctive morphological characters are directly dependent upon the presence in considerable quantities of certain salts, notably NaCl , is very generally accepted. Even such an ardent champion of the physical theory as Jules Thurmann did not attempt to apply it to the halophytes, saying: "However, it is impossible to overlook the influence of certain salts on the occurrence and, therefore, the dispersion of certain species. Among such is marine salt and not to speak of its evident action on the sea-coasts, our own country shows striking examples in this regard."¹

Cowles, writing on this subject, does suggest that the physical factors are the determining ones, when he says: "The halophytes form an excellent case in point, although salt plants have been all but universally instanced as illustrations of the influence of chemical factors, it may yet be proved that it is a physical rather than a chemical property of the salts which is detrimental to the activity of so many plants."²

In these days when the distinctions between physics and chemistry are being so nearly obliterated, one hesitates to contradict the statement that "it may yet be proved that it is a physical rather than a chemical property of the salts which is detrimental to the activity of so many plants." Whether or not it is a physical property of the salt, it is at least a physical property which is never duplicated in non-saline soils. Otherwise we should have frequent cases of typical halophytes occurring in non-saline habitats. Professor Cowles, like many other champions of the physical theory, neglects the fact that many plants never succeed in growing unless certain chemicals are present in certain quantities. This is all that the champions of the chemical theory maintain. That is what they mean when they say

¹ Thurmann, J., "Essai de Phytostatique," 1, 351 (1849)

² Cowles, H. C., Bull. Am. Bur. Geog., 11, 166 (1901)

that the chemical constituents of the soil do have a limiting effect upon the vegetation. The exact physiological relations between the plant and that heterogeneous complex, the soil, are not well enough known to allow us to go much further.

One of the major groups into which we have sorted our plants is that of the calcicoles or calciphiles. Is this a definite and well-recognized category?

"If a sand hill or a clay hill, a granite hill or a limestone hill, have different floras, it is not because of differences in the rock nor of the inorganic soil which comes from it, but it is because one is farther along in its life history than is the other"¹ This is the well-known doctrine of succession, which explains many conditions, such as the appearance after a fire of an entirely different type of vegetation from that occupying the ground before, but in the case of the floras of a granite and a limestone hill, the differences are such that they cannot be explained by this doctrine. One may be "farther along in its life history" than the other, but no mere lapse of time will ever allow it to attain to any typical stage of the former.

Another theory is that most plants do not grow in the places best suited to them but in the places into which they are forced. "After having studied for eleven years the flora of Algiers, I have acquired the conviction that the plants do not in most cases inhabit the localities which would suit them best, but rather those where they can escape competition with their neighbours and resist their enemies. I find that the plants which are definitely located are actually plants which have taken refuge after not being able to sustain elsewhere the struggle for life and that the terms psammophilous and xerophilous, etc., are improperly used."² Granted that some vigorous plants are able to overrun a locality and eject the species already established there, is this struggle for existence so severe and universal as to account for the manifold correlations between the stations of certain plants and certain types of soil? To use as an example a psammophyte, does *Ammophila breviligulata* occur on siliceous sand dunes and beaches simply because it is crowded out from the other habitats by more aggressive species? If *Ammophila*, certainly a most aggressive plant in its special habitat, would really grow better on other soils, why does it never appear upon them? The struggle for existence among the various plant species is not, ordinarily, so severe as to make it impossible that somewhere in a region a given species should be able to populate quite different soils.

In the case of the calcicoles, however, there is by no means such a nearly unanimous verdict, as is the case in respect to the halophytes, that the chemical nature of the soil does have a direct determining influence on the vegetation.

Those in favour of the physical theory have been so numerous, that the ideas of only some of the more prominent exponents of this theory will be discussed.

¹ Cowles, H. C., Bull. Am. Bur. Geog., ii, 169 (1901).

² Battandier, A., Bull. Soc. Bot. France, xxxiv, 189-90 (1887).

Alphonse De Candolle gave attention to the problem throughout many years. "Thus the chemical substance predominating in the soil is scarcely ever and perhaps never a cause of exclusion for any one species; but in each locality, in every country, the physical qualities of mineral substances combined with the existence of a certain climate will occasionally exclude a small number of plants from such or such kind of soil."¹

"The definite opinion expressed by De Candolle—after seven years' wanderings in France—that every plant can grow in every kind of soil, has also been verified by me after three years' wanderings in nearer Asia."²

In 1849 Jules Thurmann published the result of his studies on the vegetation of the Jura. His theories, which have been the principal source of inspiration for many later workers, can be summarized as follows:

It is the physical structure of the soil that regulates the distribution of species

Upon this structure depend the amount of water and the thermal conditions in the soil

The same species can grow on very different kinds of soil, if it encounters the same conditions of moisture.

Thurmann discussed the different weathering properties of various rocks under the action of air, water, heat, and cold, and he created an exact classification and nomenclature for the several types of soil having different physical qualities. Rocks very resistant to weathering he called *dysgeogenous*, those freely weathering, *eugeogenous*. The latter he divided into those giving as an end product sand, calling these rocks *psammogenous*, and those producing fine soil particles as clay, *pelogenous*. Intermediate types of soil he described by compound adjectives made from the roots of the terms above mentioned. Finer shades of meaning were added by use of the prefixes *per*, *hemi*, and *oligo*.

Thurmann denied the existence of any relation between the typical habitats of species, and the chemical nature of the soil, writing

"It will seem quite evident that the principal factors of the condition of the soil (with equal latitude and altitudes), its degree of division, its depth, and amount of moisture are the principal causes of the similarity or dissimilarity of the vegetation, while the identity of chemical composition implies no identity in that regard."³

"From these particular facts as well as from general evidence, it follows evidently that the dispersion of the contrasting species is not found to be in any way directly connected with the chemical composition of the underlying rocks."³ Thurmann's definition of a calcareous rock makes clear the reason why he came to the conclusions that he did. "Calcareous rocks whether compact, oolitic, etc. . . . are made up of carbonate of lime alone, or at least the latter is decidedly predominant in them."⁴ No modern champion of the chemical theory would accept this definition of a calcareous rock or soil, or debate the question on this basis, on a definition which forces into the non-calcareous group many soils containing enough lime to support a large calcicole flora

¹ De Candolle, Alphonse, "Géographie Botanique Raisonnée," i, 443-4 (1885)

² Wagner, Moritz, Bot. Zeit., vii, 356 (1849)

³ Thurmann, Jules, "Essai de Phytostatique," etc., i, 274 (1849)

⁴ Thurmann, Jules, l. c. i, 88 (1849)

Other students of this question have observed the obvious relation between the nature of the vegetation and the chemical content of the soil, but they have concluded that these relations were essentially inconstant

"On the whole, the previous observations seem to uphold the opinion advanced by M. Alphonse de Candolle. I find it difficult to admit together with M. Contejean that there is a large number of calcicolous or calcifugous plants which may be utilized to define two distinct floras in every district. Such lists if they are established in one definite district, lose all their value if one wishes to apply them to another district. The chemical composition of the soil undoubtedly affects the distribution of certain species, but only in a relative and not direct manner"¹

Admittedly, the soil preferences of certain plants change in different parts of their range, but these changes are definable and caused by definite factors, and hence worthy of attention and study.

M. Bonnier says in another place "It may be seen by the above quoted species that plants which are decidedly calcicolous in one district may become decidedly calcifugous in another, and that plants which are exclusively calcicolous or calcifugous may become indifferent elsewhere as regards the chemical nature of the soil"²

A reviewer remarked upon this "I can scarcely believe that a plant which is distinctly calcicolous in a given area may become calcifugous in another area, as has been upheld by most reliable authors"³

As in so many other fields, Linnæus was a pioneer in the attempt to state definitely and explain the nature of the habitats of individual species

"The early naturalists had considerably neglected the study and even the noting of the native countries of plants. Linnæus was the first to mention them in general works, he was the first to establish a rule and a method showing how to write out the floras, he was the first to carefully distinguish the habitations, that is the countries in which plants grow, and the habitats, that is to say the peculiar character of the localities in which they usually develop. It is, therefore, from Linnæus that are derived the first ideas of botanical geography"⁴

Following the lead of Linnæus many botanists began to observe the habitats, and, of course, they saw that limestone mountains had a different flora from that of the adjacent granitic ones. As early as 1789 H. F. Link published notes upon this.

"But the calcareous mountains have their special appearance and a character quite peculiar and different from that of other mountains, so that it generally happens that certain plants belong exclusively to calcareous rock, even if this be overlain by a thick stratum, and are but rarely found on other mountains"⁵

From the time of Link many botanists have accumulated data concerning the control of the chemical nature of the soil over plant distribution and able ones have upheld their contention against the champions

Bonnier, G., *Bull. Soc. Bot. France*, xxvi, 341 (1879)

Ibid. 340 (1879)

Gillot, F. X., *Bull. Soc. Bot. France*, xli, p. xxxi (1894)

De Candolle, A., *Dict. des Sci. Nat.*, xviii, 359 (1820)

Link, H. F., "*Flora Goettingensis*," pp. 299-336 (1789)

of the "physical theory" Only a few of the former can be mentioned here: Lachmann, de Brebisson, de Caumont, Unger, Contejean, Bogenhard, Godron, Saint-Lager, Sendtner, Magnin, Lecocq, Hilgard, Fernald, Butters, and Wherry

It is noticeable that none of these advocates of the "chemical theory" rejects the argument that the physical qualities of the soil are factors in determining the distribution of the species of plants. Such quotations as follow are typical and could be multiplied indefinitely:

"It must then be admitted that there is, outside of the physical influence of the soil another one which often becomes more active, that which depends upon its chemical composition."

"The influence of the soil upon the plant is always at once a physical and chemical one, i.e., that the soil operates upon the plant as much through its chemical constituents as through its physical nature."

"It is not our object to give any exaggerated importance to the chemical influence, but we feel that it should be attributed a part at least equal to that of physical action, and that in spite of the numerous exceptions which occur in practical observation, it should be noted that such exceptions are just as frequent when investigations are made in connexion with the physical influence."

Very early it was recognized that the important thing so far as the plant was concerned was the mineralogical nature of a rock, not its geological age. As early as 1828 de Caumont wrote "I found that the mineralogical character of the soils and not their age affects the distribution of plants."

Fr. Unger in 1836 saw that some plants were constant in their occurrence on a definite soil, others usually grew there, the absolute and the preferential calcicoles, for instance, and finally a third class which grew with equal readiness anywhere—the indifferent plants. He defined these classes and named them.

"On that account we divide all plants into three classes the first of which includes the plants which belong exclusively to this or that kind of soil, the second comprises such plants as belong not solely to one kind of soil but that prefer one special soil to all others, the third includes all the rest of the plants which appear not to be at all confined within certain kinds of soil. The first we call plants persistently of one soil, the second are plants agreeable to one soil, the third belonging vaguely to this or that soil. The first class is the least numerous, the second comprises a much larger amount, the third, finally, has by far the greatest number of plants."

Only in the case of the chasmophytes is it safe to assume that the chemical nature of the rock, strictly speaking, has a direct bearing on the species of plants. In the other cases the roots of plants come in contact, in most cases, only with the broken and weathered fragments forming the overlying soil. Hence, regardless of the nature of the rock, it is the nature of the soil that is of importance. That these two—the rock and the soil—are not always similar in nature was early recognized by Link when he wrote:

* Godron, D. A., "Essai sur la Géogr. Bot. de la Lorraine," 181 (1862)

† Trautschold, H., *Bull. Soc. Imp. Nat. Moscou*, xxi, 392 (1858)

‡ Lecocq, H., "Études sur la Géogr. Bot. de l'Europe," ii, 146 (1854)

§ de Caumont, A., *Mém. Soc. Linn. Normandie*, iv, 118 (1828)

¶ Unger, Fr., "Ueber den Einfluss des Bodens auf die Verteilung der Gewächse nachgewiesen in der Vegetation des nordöstlichen Tirols," 168 (1836)

" If indeed the layer of earth increased so much that the roots of the plants were not limited by the stones, but could freely rove about, the distinction between a calcareous soil and a sandy one vanishes more and more, especially in case the stones are so hard that their particles cannot be mixed up with the soil."¹

This subject has recently been investigated from a modern point of view and with the more advanced technical methods of the present day by E. T. Wherry. He used the walking fern *Camptosorus rhizophyllus* as his index and endeavoured to find it growing in as many different sorts of habitats as possible. In this he was unusually successful, finding it on everything from a limestone to a gneissoid granite or a hemlock stump. In each case he made a chemical analysis of some of the actual substratum in which the roots of the fern were growing. Wherry's conclusions are that, "if a calcareous soil is defined as one containing more lime than the average field soil (0.8 per cent or less), then the soils supporting the growth of walking fern are certainly highly calcareous." This was so, even in the case of the particular granite, and hemlock stump upon which he found specimens growing. "Summary. . . . It has been shown by chemical analysis that the rocks supporting the growth of walking fern (*Camptosorus rhizophyllus*) are by no means necessarily calcareous, but that the soils in which this fern grows are rather high in both total and soluble lime. Rocks high in lime suffer leaching during soil formation, and those low in this constituent gain it through decay of vegetable matter, the ultimate amount varying widely with the conditions, but averaging about 4 per cent."²

These differences in soil are accurately represented by the change in vegetation. On the boggy summits of Mingan islands are many oxylophytes not occurring on the wooded hillsides or on the limestone cliffs by the sea or, in fact, on any other part of the islands. These high central parts of the islands have been constantly subject to leaching, hence most of the available lime has been dissolved by the carbonated water which seeps down through the humus. Owing to the nature of the drainage the soluble salts are removed to the lower slopes and are not concentrated near any of these high bogs. This is the explanation of the presence in these bogs of an oxylophytic flora.

The eminent soil chemist, the late Professor E. W. Hilgard, wrote in his chapter on the "Recognition of the character of soils from their native vegetation" "In all, or nearly all cases, it is tacitly assumed that the underlying geological formation has essentially been the source of the soil, and that its character is determined accordingly. But this assumption is wholly arbitrary unless confirmed by actual direct examination. A soil-formation overlying limestone on the slopes of a range may be wholly derived from non-calcareous formations lying at a higher elevation, or may have been leached of its original lime-content by abundant rains."³

Because of this ever present possibility that the soil in a given place will be different chemically from the underlying rock, data as to what plants grow on special soils must be collected with the greatest care. The chance for error is so considerable that it may very well explain some of

¹ Link, H. F., "Fl. Goettingensis," 334 (1789)

² Wherry, E. T., Jour. Wash. Acad. Sci., vi, 678-9 (1916)

³ Hilgard, E. W., "Soils," 523-4 (1907)

the contradictory results reached by different observers. *Saxifraga Aizoon* was found growing upon granite on mount St. Gothard,¹ and this record has been widely cited as a proof that the supposed relation between the so-called calcicoles and the presence of lime in the soil was a myth. In Saguenay county *Saxifraga Aizoon* is known to occur in only two areas: the limestone sea-cliffs and talus slopes of Mingan islands, and on one ledge of crystalline rock of not more than 200 square feet exposure, near the summit of the great peninsula forming the western side of baie des Moutons. Although this ledge appeared to be "granite," it was conspicuously different from the surrounding granites and gneisses by containing frequent large crystals of pink feldspar, and in weathering very easily. A fragment from this ledge was submitted for analysis to Mr. Thorndike Saville, who reported it to be peithitic syenite. The chemical composition, as deduced from the above percentages of minerals is, very roughly, as follows

	Per cent
Silica	57
Lime	8
Alumina	13
Soda	3
Potash	14
Ferric oxide	3
Magnesia	2
	100

The relatively large proportion of lime explains why *Saxifraga Aizoon* was found growing on an intrusive rock at baie des Moutons, 200 miles from Mingan islands. Results like this make one sceptical as to the chemical nature of the "granite" of mount St. Gothard on which the *Saxifraga* was found growing.

In reference to similar cases of alleged discrepancies in the distribution of typical calcicoles Hilgard remarked "The feldspars constituting rocks designated as granite, may or may not be partly or wholly of the soda-lime instead of the potash series, the mica may or may not be partly replaced by hornblende, in which cases the soil would be calcareous to the extent of determining the character of the flora as calcifuge or calciphile, without its being at all evident in the physical character of the soil, which would still be 'granitic' or 'siliceous'." Such observations in order to be critically decisive, clearly require that the observer should be not merely a systematic botanist, nor a mere geologist or chemist, but all these combined. There is good reason to believe that most or all of these supposed contradictions would disappear before a critical physical and chemical examination of both the soils and the rocks from which they are supposed to have been derived."²

A source of lime available to the plants which is not often considered, is the sea.

"The lime salts which are indispensable to many of the plants, favourable to most of them, are provided by the sea itself on the coast which it bathes, either directly or indirectly."³

¹Thurmann, J., "Essai de Phytostatique," i, 352 (1849) and Contejean, C., Ann. Sci. Nat. 5 ser., xx 267-8 (1874).

²Hilgard, E. W., "Soils," 524 (1907).

³Gubler, A., Bull. Soc. Bot. France, viii, 442 (1861).

"In districts where limestone rocks are absent, calcicole plants may find a congenial home on maritime sands of which comminuted shells form a proportion."¹

The occurrence of *Botrychium Lunaria* along the north shore of the gulf of St. Lawrence illustrates this doctrine that the shores of the sea often contain enough lime to support calcicoles. Records giving the habitat show it to come from the two considerable limestone areas and from the top of the strand at one intervening place, pointe au Maurier.

The influence of lime on vegetation has been discussed more frequently than many of the points just considered. More than a century ago Sausure wrote

"As one passes from the calcareous to the granitic mountains one is struck with amazement at the different influences which these two soils have on vegetation. The calcareous soil seems to excel the granitic, not merely in that greater variety of plants which it supports, but also in that state of vigour and of prosperity which they are found to have"²

And somewhat later says Von Mohl "From both these enumerations it is made equally plain that the calcareous soil exerts a very favourable influence on the richness of the flora, in so far as both the absolute and the preferential calcicoles make up a larger quantity than the plants which are either always or usually confined to the primitive rocks"³

In a semi-popular account of Wales, Professor A. H. Graves has recently stated that "In general the acid igneous rocks support little plant growth, while the areas containing limestone are well watered and rich in vegetation"⁴

In describing the upper reaches of Moisie river, which enters the gulf slightly east of Seven Islands—the region here specially considered—H. Y. Hind made a statement pertinent in this connexion

"The soil where trees grew was always shallow as far as observed, and although a very luxuriant vegetation existed in secluded valleys, yet it appeared to depend upon the presence of labradorite-rock or a very coarse gneissoid rock, in which flesh-coloured feldspar was the prevailing ingredient"⁵ This description of the latter rock strongly suggests the rock which forms the ledge at baie des Moutons which supports *Saxifraga aizoon* referred to above.

Agricultural experiments have produced some of the strongest arguments for the increased productiveness due to lime in the soil. Hilgard, writing of virgin lands, says, "When we investigate the cases of such lands, it soon becomes apparent that besides the low percentage of any one ingredient, the proportions of others present require consideration. Among these, lime, in the form of carbonate, stands foremost. Its presence exerts a dominant and beneficial influence in many respects, as is readily apparent from the prompt change in vegetation whenever it is introduced into soils deficient in it." "In general, we find that lower percentages of potash, phosphoric acid, and nitrogen are adequate, when a large proportion of lime carbonate is present"⁶

¹ Praeger, R. L., Proc. Royal Irish Acad., vii, xxviii (1901)

² Sausure, N. T., Journ. de Phys., li, 10 (1800)

³ von Mohl, H., Vermischte Schriften, 427 (1845), this particular article written in 1838

⁴ Graves, A. H., Mem. N. Y. Bot. Gard., vi, 167-8 (1916)

⁵ Hind, H. Y., Can. Nat. new ser., i, 302 (1864)

⁶ Hilgard, E. W., "Soils," 353-4 (1907)

Of the various phases of this subject, one of the most interesting is that, as shown by trustworthy records, a species does not necessarily have the same soil preferences throughout its range

"Many plants growing in certain floral districts on a particular soil present in warmer or colder districts conditions of subsoil entirely different."¹

"The same species in different climatic circumstances make different demands on the subsoil. Many continental species, which in the south-eastern lowlands are independent of the nature of the subjacent rock, and grow indifferently on limestone, gneiss, granite, etc., are, in the western, northern, and higher regions, bound to the limestone, doubtless because it is dry and warm, for which reason also many species have their most northern limit on limestone."²

Here is a field of work which can be approached from the observational viewpoint, or by exact experiment, this study of the exact soil requirements of species throughout their range. It is a meeting point of taxonomy, physiology, and geology and it promises large and very fundamental results

As giving added weight to the determination of whether or not certain species are calcicole, it is well to quote the conclusion published toward the end of a long life of intensive study of soil chemistry by Hilgard, "What is a calcareous soil? The definition adopted for this volume" is, "that a soil must be considered calcareous so soon as it naturally supports a calciphile flora—the 'lime vegetation' so often referred to above and named in detail. Upon this basis it has been seen that some (sandy) soils containing only a little over one-tenth of one per cent of lime show all the characters and advantages of calcareous soils, whereas in the case of heavy clay soils, as has been shown, the lime-percentage must rise to over one-half per cent to produce native lime growth."³

One more quotation is given to show that these relations between the distribution of the plants and the chemical nature of the soil are not confined to the vascular plants

"It is a dogma accepted by all lichenologists from Acharius and Fries down to Koerber and Nylander that the saxicolous lichens are almost invariably all attached either on siliceous rocks or on calcareous rocks."⁴

It should be clear, from the foregoing analysis of the natural distribution of the plants of Saguenay county, and from the numerous quotations from workers in other regions, that, although the relation between the nature of the soil and the distribution of plants may differ in kind and degree for each species and although the physical properties of the soil are fundamental in determining the characteristics of special habitats, the broad distribution of plants over similar climatic zones is chiefly controlled by the chemical constituents of the soil.

¹ Drude, O., "Manuel de Géographie Botanique," 43 (1897)

² Blytt, A., "Essay on the immigration of the Norwegian flora during alternating rainy and dry periods," 34-5 (1876)

³ Hilgard, E. W., "Soils," 524 (1907)

⁴ Magnin, A., Ann. Soc. Agric. Lyon, 11, 139 (1880)

LIST OF PHYTOGEOGRAPHICAL ARTICLES

1. ALBOFF, NICOLAS La flore alpine des calcaires de la Transcaucasie occidentale. *Bull Herb Boissier*, iii, 512-38 (1895)
2. BATTANDIER, A. Quelques mots sur les causes de la localisation des espèces d'une region. *Bull Soc Bot France*, xxxiv, 189-95 (1887).
3. BLYTT, A. Essay on immigration of the Norwegian flora during alternating rainy and dry periods 1-89 (1876), also in *Just Bot Jahr*, iv, 693 (1876)
4. BOGENHARD, CARL *Taschenbuch der Flora von Jena*, i-xvii, 1-483 (1850) Pp. 1-132 deal with, *Pflanzengeographische Darstellung der Flora von Jena*
5. BONNIER, GASTON *Etudes sur la végétation de la vallée de Chamonix et de la chaîne du Mont Blanc* *Rev Gen Bot*, i, 30-36, 79-84, 146-54, 204-11 (1889)
6. BONNIER, GASTON Quelques observations sur les relations entre la distribution des phanérogames et la nature chimique du sol *Bull Soc Bot France*, xxvi, 338 (1879)
7. BOULAY, L'Abbé De l'influence chimique du sol sur la distribution des espèces végétales *Bull Soc Bot France*, xxii, pp xli-xlvii (1885)
8. DE BREBISSE, ALPHONSE Coup d'œil sur la végétation de la Basse-Normandie considérée dans ses rapports avec le sol et les terrains *Mem Soc Linn de Normandie*, iv, 367-91 (1828)
9. BRIQUET, JOHN Notes sur la flore du massif de Platé *Le Globe*, xxxiv, *Mémoires*, 171-221 (1895)
10. BUTTERS, FREDERIC K. Some peculiar cases of plant distribution in the Selkirk mountains, British Columbia *Minnesota Bot Studies*, 313-31 (1914)
11. DE CAUMONT, ARCISE Essai sur la topographie géognostique du Calvados *Mem Soc Linn de Normandie*, iv, 59-366 (1828)
12. CHRIST, H. *Das Pflanzenleben der Schweiz*, pp i-xiv, 1-488 (1879)
13. CHRIST, H. La flore de la Suisse et ses origines, 1-571 (1883), 2nd ed with supplement 1-107 (1907)
14. CLEMENTS, FREDERIC EDWARD *Plant physiology and ecology*, 1-315 (1907)
15. CONTEJEAN, CHARLES De l'influence du terrain sur la végétation *Ann Sci Nat (Bot)* ser 5, xv, 226-304 (1874), ser 6, ii, 222-307 (1875), also as *Géographie botanique*, influence du terrain, etc, 1-143 (1881)
16. CONTEJEAN, CHARLES Origine et repartition du calcaire dans les sables maritimes *Compt Rend Acad Sci, Paris*, lxxvi, 500-3 (1878).
17. COWLES, HENRY C. The contribution of Linnæus and his students to phytogeography *Science*, xvii, 463-4 (1903)
18. COWLES, HENRY C. The influence of the underlying rocks on the character of vegetation *Contrib Hull Bot Lab*, xxiv, *Univ of Chicago, Bull Am Bur Geog*, ii, 163-76, 376-88 (1901)
19. DAWSON, J W. Review of Hooker's outlines of the distribution of arctic plants *Can Nat*, vii, 334-44 (1862)
20. [DE CANDOLLE, ALPHONSE] (not signed), *Géographie botanique Dictionnaire des sciences naturelles*, xviii, 359-436 (1820)
21. DE CANDOLLE, ALPHONSE *Géographie botanique raisonnée*, 2 vols (1855)
22. DE CANDOLLE, ALPHONSE Sur les causes de l'inégale distribution des plantes rares dans la chaîne des Alpes *Atti del Congresso Internazionale Botanico, Firenze*, 92-104 (1876)
23. DELBOS, JOSEPH Recherches sur la mode de la répartition des végétaux dans le département de la Gironde *Mem Soc sc phys nat Bordeaux*, i, 427-69 (1854)
24. DRUDE, OSCAR *Atlas der Pflanzenverbreitung*, pp 1-6, maps i-viii (1887)
25. DRUMMOND, A T. The distribution of plants in Canada in some of its relations to physical and past geological conditions *Can Nat* 2nd series, iii, 161-7 (1866-8)
26. DUNAL, FELIX De l'influence minéralogique du sol sur la végétation *L'institut* xvi, 240-1 (1848), also *Notizen aus dem Gebiete der Natur- und Heilkunde*, viii, 182-3 (1848)

27. DUROCHER, J. Observations relatives à l'influence de la nature du sol sur la végétation. *Compt. Rendus*, Paris, xxiv, 746-9 (1849)
28. FERNALD, MERRITT LYNDON. A botanical expedition to Newfoundland and southern Labrador. *Rhodora*, xiii, 109-62 (1911)
29. FERNALD, M. L. The soil preferences of certain alpine and subalpine plants. *Contrib. Gray Herb.* n. s. xxv, also *Rhodora*, ix, 149-93 (1907)
30. FRILS, THORE C. E. Botanische Untersuchungen im nördlichsten Schweden. Ein Beitrag zur Kenntniss der alpinen und subalpinen Vegetation in Torne Lappmark. *Upsala* (1913)
31. FROBEL und HEER, OSTWALD. Die Vegetationsverhältnisse des südöstlichen Theiles des Cantons Glarus. *Mittheil. aus dem Gebiete der theoretischen Erdkunde*, i, Zurich (1834)
32. GILLOT, F. X. Influence de la composition minéralogique des roches sur la végétation. Colonies végétales heterotopiques. *Bull. Soc. Bot. France*, xli, pp. xvi-xxxvi (1894).
33. GILLOT, H., et CHATEAU, E. L'appétence chimique des plantes et leur répartition topographique. *Bull. Soc. Bot. France*, lvi, 215-32 (1906)
34. GODRON, D. A. Essai sur la géographie botanique de la Lorraine, 1-212, Nancy (1862)
35. GRABOWSKI, HEINRICH. Flora des Oberschlesien und der Gesecke mit Berücksichtigung der geognostischen Boden- und Höhenverhältnisse, pp. 1-x, 1-451 (1843)
36. GRAVES, ARTHUR H. A botanical trip to north Wales in June. *Mem. N. Y. Bot. Gard.*, vi, 167-72 (1916)
37. GUBLER, ADOLPHE. De la mer comme source de calcaire pour les plantes littoral. *Bull. Soc. Bot. France*, viii, 431-43 (1861)
38. GUFFRAY, CH. Calcaire, calcimétrie et plantes calcicoles. *Bull. Soc. Bot. France*, lvii, 232-4 (1910)
39. HANSTEIN, HEINRICH. Ueber die Bodenstetigkeit der Pflanzen. *Flora*, xli, 145-9 (1858)
40. HEER, OSWALD. Beiträge zur Pflanzengeographie mit einem Gemälde der Vegetationsverhältnisse des Cantons Glarus, 1-190 (1835). See also Frobel und Heer
41. HILGARD, E. W. Soils, their formation, properties, composition, and relations to climate and plant growth in the humid and arid regions, pp. 1-xxvii, 1-563 (1907)
42. HILGARD, E. W. Ueber den Einfluss des Kalkes als Bodenbestandtheil auf die Entwicklungsweise der Pflanzen. *Forschungen auf dem Gebiete der Agriculturphysik* x, 185-95 (1888). Reviewed in *Bot. Centralt.*, xxviii, 209-10 (1888), and in *Just, Bot. Jahr*, xvi, Abt. 2, 47 (1888).
43. HÖCK, F. Einige Hauptergebnisse der Pflanzengeographie in den letzten 20 Jahren. *Monatl. Mittl. der nat. Ver. Frankfurt*, v, 6-12, 25-30, 140-4, 163-9 (1888)
44. HOFFMANN, HERMANN. Ueber Kalk- und Salzpflanzen. *Landwirth. Versuchstationen*, Dresden, xiii, 269-304 (1870), reviewed in *Chem. Soc. Jour*, ix, 1209-10 (1871)
45. HOFFMANN, HERMANN. Untersuchungen z. Klima und Bodenkunde mit Rücksicht auf die Vegetation. *Bot. Zeitung*, xliii, Beilage 1-124 (1865)
46. HOFFMANN, HERMANN. Vergleichende Studien zur Lehre von der Bodenstetigkeit der Pflanzen. Bericht der Oberhessischen Gesell. für Natur- und Heilkunde, viii, 1-12 (1860)
47. IVOLAS, J. Les plantes calcicoles et calcifuges de l'Aveyron. *Bull. Soc. Bot. France*, xxxiii, Session extraord., pp. xxxv-xlv (1886)
48. KERNER, ANT. Ueber das sporadische Vorkommen sogenannter Schieferpflanzen im Kalkgebirge, etc. *Verhandlungen Zool. bot. Gesellschaft*, Wien, xiii, 245-56 (1863).
49. KIRSCHLEGER, FRIEDRICH. Flore d'Alsace et des contrées limitrophes, vol. iii, pt. 1, La géographie botanique des régions rhenanovosgiennes (1862)
50. LACHMANN, jun., H. W. L. Flora der Umgegend von Braunschweig, 2 vols. (1827-28). Einfluss des Bodens auf die Vegetation occupies vol. 1, pp. 115-47.
51. LECOQ, HENRI. Etudes sur la géographie botanique de l'Europe. 9 vols., ii, chapt. xvii. De la classification des espèces relativement à l'action chimique du sol (1854-8).

52 LEES, FREDERIC ARNOLD Flora of west Yorkshire Lithological control of distribution occupies pp 63-84 (1888)

53. LE GRAND, ANTOINE Flore analytique du Berry, etc , pp 1-lxvi, 1-346 (1887)

54 LE JOLIS, AUGUSTE De l'influence chimique du terrain sur la dispersion des plantes Mem Soc Sci Cherbourg, viii, 309-72 (1861), see also Congrès Scient France, xxvii, 227-62 (1860)

55 LINDBLOM, ALEXIS EDUARD In geographicam plantarum intra Sueciam distributionem adnota proponit, 1-100 (1835)

56 LINK, G F Einige Bemerkungen ueber den Standort der Pflanzen Neue Annalen der Botanik, herausgegeben von Dr Paulus Usteri, viii, 1-17 (1795)

57 LINK, HENRICUS FRIDERICUS Flora Goettingensis specimen sistens vegetabilia saxo calcareo propria Dissertatio Goettingæ, 299-336 (1789)

58 LINNÆUS, CAROLUS Philosophia botanica Sec 334 Loca natalia plantarum respiciunt Regionem, Clima, Solum & Terram (1751)

59 LINNÆUS, CAROLUS Stationes Plantarum Amœnitates acad , iv, 64-87 (1754)

60 MAGNIN, ANTOINE Observations sur la flore du Lyonnais Ann Soc Bot Lyon viii, 261-308 (1879-80), ix, 201-56 (1880-1), x, 115-68 (1881-2), xii, 25-300 (1884)

61 MAGNIN, ANTOINE Recherches sur la géographie botanique du Lyonnais Ann Soc Agric Lyon, ii, 1-160 (1880)

62 MERRILL, GEORGE P Rocks, rockweathering, and soils, pp 1-xx, 1-411 (1897)

63 VON MOHL, HUGO Ueber den Einfluss des Bodens auf die Vertheilung der Alpenpflanzen (1838) Included in Vermischte Schriften botanischen Inhalts, 393-428 (1845).

64 MORE, ALEXANDER GOODMAN edited by COLGAN, NATHANIEL and SCULLY, REGINALD W, Contributions towards a cybele hibernica, 2nd ed, pp 1-lxvi, 1-538 (1898)

65 MOUGELOT, ANTOINE Considerations générales sur la végétation spontanée du département des Vosges, 1-356 (1845)

66 MURRAY, ALEXANDER Observations on the supposed connection of rocks with plants Loudon's Mag Nat Hist , vi, 335-44 (1833)

67 MURRAY, ALEXANDER Thoughts regarding the influence of rocks upon native vegetables New Philos Journ Edinburgh, xi, 56-65 (1831)

68 NÄGELI, CARL Bedingungen des Vorkommens von Aiten und Varietäten innerhalb ihres Verbreitungsbezirkes Sitzungsber Akad Munchen, ii, 367-95 (1865)

69 PERRIER DE LA BATHIE, E and SONGEON, A Aperçu sur la distribution des espèces végétales dans les alpes de la Savoie Bull Soc Bot France, x, 675-86 (1863)

70 PRAEGER, ROBERT LLOYD A tourist's flora of the west of Ireland, pp 1-xii, 1-243 (1909)

71 PRAEGER, ROBERT LLOYD Irish topographical botany Proc Royal Irish Acad , vii, pp 1-clxxxviii, 1-410 (1901)

72 DE SAINT-HILAIRE, AUGUSTE Tableau de la végétation primitive dans la province de Minas Geraes Ann Sci Nat , xxiv, 64-102 (1831)

73 SAINT-LAGER, JEAN L'appétence chimique des plantes et la concurrence vitale 1-32 (1895)

74. SAINT-LAGER, JEAN Influence chimique sur la distribution des plantes Ann. Soc Bot Lyon, iii, 83-6 (1876), iv, 50-84, 133-5 (1877), v, 179-81 (1878), vi, 25-8 (1879)

75 DE SAUSSURE, NICOLAS THEODORE De l'influence du sol sur quelques parties constituantes des végétaux Journ de Phys , li, 9-40 (1800), also in Gilbert, Ann vi, 459-62 (1800), and in Tilloch, Phil Mag , viii, 184-7 (1800)

76 SAUTER, A Zur Geographie der Alpenpflanzen Flora, xl, 145-9 (1831).

77 SCHIMPER, A F W Plant geography upon a physiological basis Translated by Fisher, W R , revised and edited by Groom, Percy, and Balfour, I B 1-422 (1903)

78 SENDTNER, OTTO. Beiträge und Berichtigungen zu der Bodenfrage der Pflanzen gesammelt im Bayerischen Walde während des Jahres 1854 Flora, xxvii, 497-507 (1854)

79 SENDTNER, OTTO edited by Gümbel, W., und Radlokofer, I. Die Vegetationsverhältnisse des Bayerischen Waldes nach den Grundsätzen der Pflanzengeographie Literarisch-artistische Anstalt, München, xiii, 1-505 (1860), also as Beitrag zur naturwissenschaftlichen Erforschung der Bayerischen Lande, herausgegeben von der K B Akademie der Wissenschaften, v, 1-505 (1860)

80 SENDTNER, OTTO Die Vegetationsverhältnisse Südbayerns nach den Grundsätzen der Pflanzengeographie und mit Bezugnahme auf die Landeskultur geschildert. Literarisch-artistische Anstalt, München, pp i-xii, 1-910 (1854), also as Beitrag zur naturwissenschaftlichen Erforschung der Bayerischen Lande, herausgegeben von der K B Akademie der Wissenschaften, iii, pp i-xii, 1-910 (1854)

81 SPRENGEL, CARL Von der Lage, den physischen Eigenschaften, den chemischen Bestandtheilen und der Vegetation in Hannover Journ für technische und ökonomische Chemie, iv, 1-38 (1829)

82 STUR, D Beitrag zur Kenntniss der Flora Ungarus Oesterreichisches botanisches Wochenblatt, v, 73-5, 83-4, 91-4, 97-9, 117-8, 124-5, 133-5, 139-41, 146-8 (1855)

83 STUR, D Ueber den Einfluss des Bodens auf die Vertheilung der Pflanzen Sitzber d K Akad d Wiss Wien, xv, Heft 1 71-149 (1856)

84 STUR, D Ueber den Einfluss des Bodens auf die Vertheilung der Pflanzen Sitzungsberichte d K Akademie d Wissenschaften, mathematisch-naturwissenschaftliche Classe, Wien, xxv, 349-421 (1857)

85 TANSLEY, ARTHUR GEORGE Types of British vegetation, pp i-xvi, 1-416 (1911).

86 THOMSON, WILLIAM Remarks on the relation subsisting between geological strata and the plants most frequently found growing on their superincumbent soils London's Mag Nat Hist, xviii, 410-9 (1830)

87 THURMANN, JULES Essai de phytostatique appliquée à la chaîne du Jura, etc, 2 vols (1849)

88 TRANSEAU, E N On the geographical distribution and oecological relations of the bog plant societies of North America Botanical Gazette, xxxvi, 401-20 (1903)

89 TRAUTSCHOLD, H Bemerkungen und Versuche zur Frage über den Einfluss des Bodens auf die Pflanzen Bull Soc impériale des naturalistes de Moscou, xxxi, 329-94 (1858)

90 UNGER, FR Ueber den Einfluss des Bodens auf die Vertheilung der Gewächse nachgewiesen in der Vegetation des nordöstlichen Tirols, i-xxiv, 1-367 (1836)

91 UNGER, F, und HRUSCHAUER Beiträge zur Lehre von der Bodenstetigkeit gewisser Pflanzen Denkschrift d K Akad d Wissenschaften, Wien, i, 83-90 (1850)

92 VALLOT, JOSEPH Influence chimique du sol sur la végétation du sommet des Alpes Bull Soc Bot France, xxiv, 25-9 (1887)

93 VALLOT, J Note sur une station de l'Asplenium septentrionale sur le quartzite compacte de Lodève Bull Soc Bot France, xxv, pp xviii-xxi (1883)

94 VALLOT, J Recherches physico-chimiques sur la terre végétale et ses rapports avec la distribution géographique des plantes pp i-xvi, 1-344 (1883)

95 WAGNER, DR MORITZ Reise nach dem Ararat und dem Hochlande Armeniens Bot Zeit, vii, 356-8 (1849)

96 WARMING, EUGÈNE, assisted by VAHL, MARTIN, English ed by GROOM, PERCY, and BALFOUR, ISAAC BAYLEY Ecology of plants 1-422 (1909)

97 WHERRY, EDGAR T A chemical study of the habitat of the walking fern, camp-tosorus rhizophyllus (L.) Link Journ Washington Acad Sci, vi, 672-9 (1916)

EXPLANATION OF ABBREVIATIONS

Notation used in the citation of specimens in the taxonomic revisions and the following annotated list of species to indicate the herbarium in which the plant may be found.

C. = Canadian National Herbarium, Ottawa

(H) = Gray Herbarium, Harvard University

(N) = New York Botanical Garden

(P) = Academy of Natural Sciences of Philadelphia

(R) = Rocky Mountain Herbarium, University of Wyoming

(Q) = Musée Scolaire, Département de l'Instruction Publique, Quebec

(U) = United States National Museum

(Y) = Eaton Herbarium, Yale University

TAXONOMIC REVISIONS

EQUISETUM

EQUISETUM PALUSTRE L., var **nigridens** n. var. Rhizoma supra ramosum, caulibus pluribus 1-4 dm altis 1-2.5 mm crassis 6-sulcatis, ramis infecundis lateralibus plerumque fecundis superantibus, 6-sulcatis, dentibus vaginarum marginisque angusti-membranaceis nigris

Rootstock branching near summit; stems several, 1-4 dm. high, 1-2.5 mm. thick, 6-angled, sterile lateral branches usually overtopping the fertile, teeth of sheaths and their narrow membranaceous margin black.

Known only from Quebec muddy edge of pool in tundra, Romaine, Lagorgendière, July 8, 1915, Harold St. John (C. No. 90,034, type). The variety differs from the species as known in adjacent as well as distant regions, in having the membranaceous margins of the teeth suffused with dark, colouring matter

ALOPECURUS

ALOPECURUS ARISTULATUS Michx., var **Merriami** (Beal) n. comb. *A. Howellii* Vasey, var. *Merrimani* Beal¹. Grasses of N. America, II, 278 (1896). Through the kindness of Prof. A. S. Hitchcock, the writer has been enabled to examine a part of the type of this variety. It has a short, not-twisted awn, attached near the middle of the lemma and not exerted beyond the glumes. As in this and all other specific characters, the variety agrees with *A. aristulatus* Michx., the new combination is made under that species. In *A. aristulatus* the spikelets are straw-coloured, or, when fresh, tinged with green. In the variety *Merriami*, the spikelets are violet-tinted, the plant is more dwarfed in habit, the spikes are shorter, and the leaf sheaths are shorter and more inflated

From its very brief description² *A. fulvus* Smith, forma *violacea* Hackel would seem to be identical with *A. aristulatus* Michx., var. *Merrimani* (Beal) St John. The diagnosis is simply, "Differt a typo spiculis violascentibus." As it has been fully demonstrated³ that *A. fulvus* Smith must

¹ Erroneously credited to, and described in honour of, Dr. C. H. Merriman, instead of to Dr. C. Hart Merriam

² DuRoi, P., "Svenska Exped. Till Magellansländerna," in, 218 (1900)

³ Simmons, H. G., Arkiv För Botanik, vi, No. 17, 2 (1907) and St John, H., Rhodora, xix, 165 (1917).

be treated as a synonym of *A. aristulatus* Michx., the two variants *Merriami* and *violacea* seem to be identical. To test this, the writer sent an authentic specimen of the var. *Merriami* (part of the collection from Quebec cited below) to Upsala, where it was compared by Dr. H. O. Juel, Director of the Botanical Museum, with the type specimen of forma *violacea*. He reports: "In your specimen the glumæ are more hairy on the surfaces, and the bristles on their edges are more prominent; also the spiculæ are somewhat shorter than in the specimen of *A. fulvus*, f. *violaceus*." We must, consequently, consider the forma *violacea* from southern Patagonia as distinct from the boreal var. *Merriami*. This is known only from the more northern and alpine limits of the range of the species.

Iceland Grenjadarstad, July 6, 1895, Miss Elizabeth Taylor. Greenland Frederiksdal, August 1, 1889, D. E. Lundholm, northern Greenland, Sakkak, 1870, Berggren, and July 18, 1871, T. M. Fries. Quebec sprawling on sandy pond shore, anse des Dunes, Brest, July 31, 1915, Harold St. John, C. No. 90,117. Saskatchewan 1858, E. Bourgeau. Colorado, below Hebron, altitude 9,000 feet, North Platte river, August 19, 1898, C. L. Shear and Bessey, No. 1,502, Dead lake, altitude 3,500 m, August 14, 1901, F. E. and E. S. Clements. Herbaria Formationum Coloradensium, No. 464. Oregon low ground, Dalles, April 12, 1903, J. Lunell, No. 6, Rowena, May 11, 1899, A. B. Leckenby. Washington bottom lands of Columbia river, western Klickitat county, May 11, 1892, W. N. Suksdorf, No. 1,066. Alaska St. Paul island, July 25, 1897, J. M. Macoun, C. No. 16,636, St. George island, August 10, 1891, C. H. Merriam (TYPE).

POA

POA ALPINA L., var. ***Bivonæ*** (Parl.), n. comb. *P. Bivonæ* Parl. in Gussone, Fl. Sic., 1, 99 (1842), *P. insularis* Parl. b. *Bivonæ* Parl., Parl. Fl. Italiana, 1, 342 (1850), *P. alpina* L. β . *insularis* (Parl.) Fiori b. *Bivonæ* (Parl.) Fiori, Fiori e Paoletti, Fl. An. Ital., 1, 85 (1896-8).

A plant of wet calcareous rocks of Newfoundland, and Mingan islands is inseparable from *P. Bivonæ* Parl. described from the mountains of Sicily. Both are obviously an extreme of the widely dispersed *P. alpina* L., differing in having the spikelets yellowish or greenish in colour, not bordered with purple, the lemmas with a broader hyaline margin; the panicle much fuller, bearing 50 to 125 spikelets, the plant densely caespitose, of much more luxuriant growth, culm leafy to the summit, and the leaves often much overtopping the panicle. The extreme specimens are strikingly distinct from *P. alpina* L., but several intermediate specimens at hand lead the writer to treat *P. Bivonæ* as a variety of that species.

Newfoundland. brookside and damp bushy ravines on the limestone tableland, altitude 200 to 300 m, Table mountain, region of Port à Port bay, July 16 and 17, 1914, M. L. Fernald and H. St. John, No. 10,785 (H). Quebec. limestone sea-cliffs, Eskimo island, June 29, 1915, Harold St. John (C. No. 90,802). Material intermediate between *P. alpina* and the var. *Bivonæ* has been seen from Quebec limestone sea-cliffs, Eskimo island, June 29, 1915, Harold St. John (C. No. 90,803). Colorado. Little Kate mine, La Plata mountains, altitude 11,500 feet, C. F. Baker, F. S. Earle, and S. M. Tracy, No. 928 (H).

SALIX VESTITA AND ITS VARIETIES

BY M. L. FERNALD AND H. ST. JOHN

Salix vestita Pursh, as its author justly said, is "a very elegant species," but like so many species of willows, it shows a considerable range of variation. This has been studied by the writers and the results affecting the North American plant are embodied in the following key.

A Capsules narrowly ovoid, definitely tapering to the blunt tip, pistillate catkin 0.5–3 cm long, staminate catkin 0.6–2 cm long, leaves obovate or orbicular, usually somewhat retuse and reticulately veined

B Leaves permanently clothed beneath with soft, white, silky pubescence, staminate catkin 1–1.5 cm long, winter buds pubescent at least at the tip

1 *Salix vestita* Pursh

B' Leaves nearly glabrate beneath, a few hairs persisting on the veins, even the young leaves only sparsely clothed, staminate catkin 1.7–2.5 cm long, winter buds quickly glabrate and lustrous

2 *S. vestita*, var *psilophylla* Fernald and St. John

A' Capsules only slightly tapering to the broad rounded summit, pistillate catkin 2–5 cm long, staminate catkin 1–3 cm long, leaves elliptical or oblong, often subacute, usually plane above

3 *S. vestita*, var *erecta* Anderss

1 *SALIX VESTITA* Pursh, Fl. Am. Sept., n. 610 (1816), *S. reticulata* L., var *vestita* (Pursh) Anderss. Öfvers. K. Vet. Akad. Forh. (Nordamerik. pilarter, Salices) 133 (1858). Trunks stout, depressed or subascending, rarely 1 m. high, in exposed situations somewhat matted, leaves 1.5–8 cm. long, 0.8–6.5 cm. broad. Limestone ledges and shingle from northern Labrador and Ungava to northern and western Newfoundland, Mingan islands, Anticosti island, and Gaspé peninsula, Que. The record of this species from Altai mountains, Siberia, was presumably based upon specimens of *S. reticulata* L., var *villosa* Trautv. in Ledeb. Fl. Alt., iv, 291 (1833) and later renamed by Andersson *S. vestita*, α *humilis* in DC. Prodr., xvi, sec. 2, 300 (1868). At least the material from this region collected by Bunge and distributed as *S. vestita* is *S. reticulata*, var *villosa*, not *S. vestita*. There are reports of the species from Europe, but the authors have seen no material.

2. *S. VESTITA* Pursh, var ***psilophylla***, Fernald and St. John, n. var., foliis tenuibus subtus pallidis glabrescentibusque supra rugosis obovatis vel ellipticis 3–5.5 cm longis, 1.7–4.7 cm latis, amentis masculis 1.7–2.5 cm longis, amentis femineis (immaturo) 2–3 cm longis, floribus basin versus sparsis, squamis gemmarum fulvis, glabris lucidisque, aliter formæ typicæ similibus.

Leaves thin, pale, and glabrescent beneath, slightly rugose above, obovate to elliptic, 3–5.5 cm long, 1.7–4.7 cm broad, staminate catkins 1.7–2.5 cm long, pistillate catkins (immature) 2–3 cm long, loosely flowered at base, scales of the winter buds fulvous, glabrous and lustrous, otherwise as in the typical form. Quebec limestone sea-cliffs, Eskimo island, June 28, 1915, Harold St. John (C. No. 90,378, type in Hb. Geol. Surv., Can.). This may prove to be *S. reticulata* L., α *vestita-grandifolia* Anderss.¹ but this plant was described with "amentis fere bipollicaribus" and came, at least in part, from Siberia.

¹ Andersson, Öfvers. K. Vet.-Akad. Forh., 133 (1858).

3. *S. VESTITA* Pursh, var *ERECTA* Anderss in DC. Prodr., xvi, pt. 2, 300 (1864), *S. Fernaldi* Blankinship, Mont Agric Coll Sci Studies, Botany, 1, 46-7 (1905). Erect or decumbent, leaves elliptical or oblong, 2-7 cm. long, 1-4 cm. broad, silky beneath, plane or obscurely reticulated above. Keewatin and in the mountains of British Columbia, Montana, and eastern Oregon. Exceptional specimens from British Columbia with suborbicular leaves, but with long staminate aments, connect this variety with typical *S. vestita*, as do occasional eastern shrubs with elliptical leaves.

REVISION OF CERTAIN NORTH AMERICAN SPECIES OF *ANDROSACE*

Knuth's recent monograph of the genus *Androsace*¹ presents a consistent treatment of the North American species. However, a study of the type specimens, or in a few cases, of photographs of them, and of a series of about six hundred sheets of *A. septentrionalis*, *A. occidentalis*, and their allies, has caused the author to draw different conclusions, in certain cases, as to their specific rank or their correct names.

Since 1896 there has been a marked activity by several American botanists in describing new species in this genus. Some have characterized as new species plants barely in flower and with the pedicels as yet unexpanded, plants so young that their future development as to length of scape or pedicels, position of pedicels, shape and size of calyx and capsule, can only be surmised. It is work of this sort that has created such great confusion in the treatment of this genus.

All the species here considered are annuals or winter annuals and respond easily to any unusual conditions of growth. Consequently a good deal of variation must be expected, and when found not taken too seriously.

The following key presents the species and their varieties with their diagnostic characters, as understood by the writer.

A Bracts linear

- B Scapes few, one or occasionally more, strongly developed, up to 25 cm. in length, strictly erect, pedicels slender, numerous, 15-35 on a well-developed scape, the central ones straight and ascending, the lateral arched-ascending

C Pedicels not glandular

- 1 *A. septentrionalis* L.

C' Pedicels bearing dark stipitate glands

- 1a *A. sept.*, var *glandulosa* (Wootton and Standley) St. John

- B' Scapes numerous, many of them of nearly equal development, pedicels often heavier and less numerous, many of them divergent

- D Scapes five or more times the length of the pedicels

- 1b *A. sept.*, var *robusta* St. John

- D' Scapes three times the length of, or exceeded by, the pedicels

- E Scapes 10-25 cm. in height, about twice the length of the slender, flexuous, widely spreading, often very numerous pedicels, plants pale green

- 1c *A. sept.*, var *subulifera* Gray

¹ Engler's Pflanzenreich, iv, Fam. 237, 172-220 (1905)

- E' Scapes less than 10 cm in height, or if slightly exceeding this, the scapes more than twice the length of the pedicels, plants dark green or reddish
- F Not dwarfed alpine varieties, scapes 5 cm. or more in height; pedicels numerous
- G Calyx-lobes and base of calyx-tube nearly glabrate
- 1d *A sept*, var *diffusa* (Small) R Knuth
- G' Calyx-lobes and base of calyx-tube densely clothed with short stellate hairs
- 1e *A sept*, var *puberulenta* (Rydb) R Knuth
- F'. Dwarfed alpine variety, scapes not over 2 or 3 cm in height, pedicels few (1-6), short and stout
- 1 f *A sept*, var *subumbellata* A Nels
- A'. Bracts lanceolate or broader
- H Bracts broadly lanceolate to elliptical, calyx-lobes conspicuously green and foliaceous, contrasting vividly with the pale scarious calyx-tube
- I Calyx-lobes erect or slightly divergent
- J Calyx-lobes large, deltoid or broadly lanceolate
- 2 *A occidentalis* Pursh
- J' Calyx-lobes narrowly deltoid or subulate
- 2a *A occid*, var *simplex* (Rydb) St. John.
- I' Calyx-lobes recurved, arching, a sprawling variety with filiform scapes and peduncles
- 2b *A occid*, var *arizonica* (Gray) St John
- H' Bracts ovate-lanceolate, with a sharp attenuate caudate tip, pedicels few (3-7), stiffly ascending or divergent, but never reflexed, calyx-lobes stiff, narrowly deltoid
- 3 *A acuta* Greene

1. *ANDROSACE SEPTENTRIONALIS* L, Sp Pl 1, 142 (1753). *A. arguta* Greene, Pittonia, iv, 148 (1900). *A Gormanii* Greene, Pittonia, iv, 149 (1900) *A septentrionalis* L, var *Gormanii* (Greene) Ostenfeld, Vidensk Selsk. Skr. Mathem.—Naturv. Kl. No. 8, 61, and fig 21 (1910). Leaves in a close basal rosette, linear-lanceolate, irregularly toothed or entire, 1-3 cm long, 0.2-0.6 cm wide, the margins and the upper surface covered with a coat of short, stiff, stellate hairs, scapes few, one or more strongly developed, up to 25 cm in length, strictly erect, scabrous at first with stellate hairs, pedicels quickly glabrate, slender, numerous (15-35 on a well-developed scape), 2-5 cm long; the central ones straight and upright; the lateral ones arched-ascending, forming a close umbel suggesting that of an *Allium*; calyx-tube campanulate, scarious and straw-coloured or sometimes greenish, longer than the calyx-teeth; corolla white or pink, exceeded by the sepals, capsule globular, the valves exceeding the calyx-lobes. Widely distributed in boreal or arctic habitats in Eurasia and the Arctic archipelago, and from Mingan islands and James bay to Alaska and south to the mountains of New Mexico. Quebec fle Ste Geneviève, July 20, 1882, D. N. Saint-Cyr (Q) Ontario mouth of Albany river, James bay, July 25, 1904, W Spreadborough (C No. 62,558); Fort Severn, James bay, August 8, 1886, J M Macoun (C. No 15,866). Alberta Lower Bow flats, Banff, July 1, 1891, J Macoun (C. No. 15,858); sandy plains, Banff, altitude 4,500 feet, May 27-July 13, 1899, W C McCalla, No 2,424 (U); Bow valley, Banff, June 9-18, Stewardson Brown, No. 54 (P). Morley, June 17, 1885, J. Macoun (C). British Columbia western summit of North Kootenay pass, July 26, 1883, Dawson (C. No. 15,865), Telegraph creek, latitude 58 degrees, May 27, 1887, Dawson (C. No. 15,864) Yukon dry gravelly soil and old river benches, Selkirk,

May 23, 1899, M. W. Gorman, No. 981 (type of *A. Gormanii* Greene) (C. and U.); growing on dry gravel banks, lake Bennett, June 5, 1899, J. B. Tarleton, No. 8 (U), near Dawson, July 12, 1902, J. Macoun (C. No. 91,226). Alaska: along Klutina river, one mile above mouth, May 28, 1902, W. L. Poto, No. 8 (U); in open ground at Rampart House, Upper Porcupine river, June 14, 1894, Frederick Funston, No. 177 (U). New Mexico Nutritas creek, below Tierra Amarilla, Rio Arriba county, 2 240 m, April 18–May 25, 1911, W. W. Eggleston, No. 6, 497 (U).

The plants that match the Eurasian specimens of *A. septentrionalis* L. are decidedly uncommon in North America, as can be seen from the preceding citation of specimens. Dr. Greene published¹ a statement of his opinion concerning the “real Old World *A. septentrionalis* (not believed by the author to exist in this country)” He did not give any reasons for his belief and to the author the identity of such North American plants as those cited with typical Eurasian plants seems so perfect as to leave no reasonable doubt.

In the same paper² Dr. Greene described as new species two plants, both very young and collected at far northern stations.

A. arguta Greene is based on a plant from Port Clarence, Bering straits, June 28, 1890, W. G. Hay. This has upright, well-developed scapes, more numerous than usual, the pedicels are unexpanded, causing the inflorescence to appear like a head, but this is well matched by sheets of typical *A. septentrionalis* from nearby Alaskan stations.

A. Gormanii Greene is likewise based on young plants of *A. septentrionalis*, in which the pedicels are as yet unexpanded. The type specimen is from dry, gravelly soil and old river benches, Selkirk, Yukon, May 24, 1899, M. W. Gorman.

1a *A. SEPTENTRIONALIS* L., var. ***glandulosa*** (Wootton and Standley) n. comb. *A. glandulosa* Wootton and Standley, Bull. Torrey Bot. Cl. xxxiv, 519 (1907). Exactly resembling *A. septentrionalis* in habit, and differing only in having more abundant persistent stellate hairs on the scape, and on the upper part of the scape and pedicels numerous dark glandular hairs. Known only from the mountains of Colorado, Arizona, and New Mexico. Colorado latitude 40–41 degrees, Rocky mountains, Powell's Colorado Exploring Expedition, 1868, Geo. Vasey, No. 376 A (H), mountain sides near Georgetown, altitude 8,000–10,000 feet, July and August, 1885. H. N. Patterson, No. 98, in part (H), Pawnee pass, July 22, 1872, Thos. C. Porter (U No. 236,041). Arizona Flagstaff, altitude 7,000 feet, June 24, 1898, Dr. D. T. MacDougal (H and P and R and U), Flagstaff, May–October, 1900, C. A. Purpus, No. 8,052 (U), Fort valley, Coconino National forest, July 3, 1909, G. A. Pearson, No. 206 (U); White mountains, August 11–15, 1903, David Griffiths, No. 5,287 (U), open flats, Alpine, July 31, 1912, L. N. Goodding, No. 1,260 (U). New Mexico Middle fork of the Gila, Mogollon mountains, Socorro county, August 5, 1900, E. O. Wootton (TYPE, U No. 738,347); Raton, June 10, 1887, Tracy and Evans (U No. 724,540).

¹ Pittonia, iv, 150 (1900).

² E. L. Greene, Pittonia, 1 c

1b. *A. SEPTENTRIONALIS* L., var. **robusta** n. var. Caulibus nullis, radice valde fibrosa, foliis rosulatis linearibus vel lanceolatis vel subspatulatis edenticulatis vel maximis ad apicem grosse inaequaliterque denticulatis 0.4-4 cm. longis, 1-6 mm latis, subter glabris, aliquis partis cum pilis brevibus stellatisque scabratis, petiolo alato scapis pluribus cum pilis brevibus stellatisque scabratis celeriter supra glabratis 18 cm. altis 5-15 (sæpissime ca. 9)-floribus divergentibus vel subdecumbentibus 5-plus plos longioribus quam pedicellis, bracteis linearibus 1-4 mm longis, pedicellis robustis usque ad 4 cm. longitudine saepe valde divaricatis mox glabratis, campanulati tubo calycis lacinias 5 breves virides late deltoides superanti, corolla et capsula lacinias calycis superanti

Plant acaulescent, springing from a fibrous tap-root, the leaves borne in a basal rosette, linear or lanceolate or nearly spatulate, nearly entire or the larger coarsely and irregularly toothed towards the apex, 0.4-4 cm long, 1-6 mm wide, with a broadly winged petiole, glabrous beneath, elsewhere scabrous with short stellate hairs scapes several, of nearly equal development, at first scabrous with short stellate hairs, but soon glabrate above, 18 cm high, the lateral ones often nearly decumbent bracts linear, 1-4 mm long pedicels stout, up to 4 cm in length, 5-15 (averaging 9) in number, commonly strongly divergent, early glabrate calyx-tube campanulate, exceeding the five short, green, broadly deltoid lobes corolla and capsule definitely exceeding the calyx-lobes. Calcareous ledges and beaches, Mingan islands, the west coast of Hudson bay and Bernard harbour, west of Coronation gulf. Quebec limestone sea-cliffs, Eskimo island, June 29, 1915, Harold St John (C No 90,815); top of limestone shingle, fle Ste Geneviève, July 1, 1915, Harold St John (C No 90,814) (TYPE) Keewatin Churchill, Hudson bay, latitude 58° 51', August 5, 1910, J. M. Macoun (C. No 79,387 and H), north of cape Jones, Hudson bay, July 8, 1899, A P Low (C No 63,247 and H and U), cape Jones, Hudson bay, July 11, 1899, A P Low (C No 63,246). Mackenzie Bernard harbour, west of Coronation gulf, July 20, and August 25, 1915, Fritz Johansen (C Nos 91,006 and 91,007)

1c. *A. SEPTENTRIONALIS* L., var. *SUBULIFERA* Gray, Synopt Fl N. Am ii, pt. 1, 60 (1886) *A. pinetorum* Greene, Pittonia, iv, 149 (1900). *A. septentrionalis* L., var. *pinetorum* (Greene) Knuth, Engl. Pflanzenreich, iv, Fam 237, 215 (1905) *A. subulifera* (Gray) Rydb, Bull. Torrey Cl. xxxiii, 148 (1906) Scapes tall, 10-25 cm, slender, about twice the length of the slender, flexuous, widely spreading, often very numerous pedicels: calyx-lobes long and tapering, plants pale green Known from South Dakota, and from Saskatchewan and Yukon south in the mountains to Arizona and New Mexico South Dakota: Rapid canyon, Black hills, August 17, 1891, T A Williams (U. No 511,110) Saskatchewan: gravelly slopes, Methy (La Loche) portage, September 19, 1875, J. Macoun (C. No. 15,863), gravelly slopes, Bad hills, July 25, 1879, J. Macoun (C No 15,862). Yukon. peat bog, mouth of Bonanza creek, July 18, 1902, J. Macoun (C. No. 91,225). Alberta: Maligne river, Athabaska river, July 5, 1898, W. Spreadborough (C No 19,846), on rocks at Sulphur spring, Crowsnest pass, August 17, 1897, J. Macoun (C. No. 23,481); Elbow river, June 21, 1897 (C. No. 23,480). Montana Cedar mountain, altitude 10,000 feet, July 16, 1897, P. A. Rydberg and Ernst A Bessey, No. 4,679 (U). Wyo-

ming: damp soil, Teton pass, July 12, 1901, E. D. Merrill and E. N. Wilcox, No. 975 (H); Pole creek, June 28, 1895, Aven Nelson, No. 1,332 (H and U); Table mountain, June 27, 1895, Aven Nelson, No. 1,332 (R). Utah: Big Cottonwood canyon, below Silver lake, July 8, 1905, P. A. Rydberg, No. 6,815 (H), Big Cottonwood canyon, Salt Lake county, altitude 8,500 feet, July 11, 1905, A. O. Garrett, No. 1,333 (R) Uinta, altitude 8,000 feet, July, 1869, Sereno Watson, No. 752 (U) Colorado Lake ranch, near Boulder City, June, 1874, H. G. French (type in H), Minnehaha, altitude 6,600 m, July 5, 1901, F. E. and E. S. Clements, No. 263 (H and U), Cimarron canyon, altitude 6,900 feet, June 7, 1901, C. F. Baker, No. 66 (H and U), Pennocks Mountain ranch, altitude 7,500 feet, June 14, 1896, C. S. Crandall, No. 4,144 (R and U), Los Pinos (Bayfield), May 16, 1899, C. F. Baker, No. 515 (H), Berwind, 1900, Jennie M. Archibald, No. 238 (R). Arizona Prescott, 1876, E. Palmer, No. 617 (H) New Mexico: Las Vegas, June 24, 1891, L. H. Dewey (U No. 245,653), Albuquerque, September 4, 1884, M. E. Jones (U No. 220,168), Winsar's ranch, Pecos River National forest, altitude 8,400 feet, June 29, 1908, P. C. Standley, No. 4,015 (U)

Gray's description of this variety is brief, mentioning only the long, slender calyx-lobes. Two collections are cited Rocky mountains, near Boulder City, Col., H. G. French, and San Bernardino, Cal., Parry and Lemmon. The former is taken as the type of this variety. It has the deeply-cut calyx and also the tall scapes and diffuse, slender pedicels taken as diagnostic in this revision. The other sheet cited, San Bernardino, Parry and Lemmon, likewise has a deeply-cut calyx and attenuate lobes, but it is a low plant with stiffly divergent pedicels and ovate-lanceolate caudate-tipped bracts. It is *A. acuta* Greene. Nothing in Gray's description indicates that either of these two plants was considered more characteristic than the other, but Greene's segregation of the latter as a species leaves only the former to stand as the representative of *A. septentrionalis* var. *subulifera*.

A. pinetorum Greene is cited here as a synonym of *A. septentrionalis*, var. *subulifera*. The original description of this was drawn from a plant from Colorado Graham park, altitude 7,800 feet, May 12, 1899, C. F. Baker, No. 516. Greene says "This species bears more resemblance to real Old World *A. septentrionalis* (not believed by me to exist in this country), than do any of the plants of the far west and north that have been referred to it." This sheet contains eight young plants with well-developed, upright scapes and the young pedicels only beginning to elongate. There is nothing in these type specimens or in the description to indicate any reason why they should be treated as distinct from *A. septentrionalis*. Other specimens collected by C. F. Baker the same season, determined by Dr. Greene as his new species *A. pinetorum*, and alluded to in his description, are the tall mature plants with the abundant long diffuse pedicels such as Dr. Gray's earlier name var. *subulifera* is applied to. Plants of this description are the ones that have usually in the past been called *A. pinetorum*, and on the basis of this interpretation of *A. pinetorum* it is put here as a synonym. It is evident that their correct name is var. *subulifera*.

Plants such as those from Arizona Fort valley, Coconino National forest, and vicinity, September 4, 1909, G. A. Pearson, No. 288 (U), demonstrate the wisdom of treating these various phases as varieties rather

than as species. They have the habit, the tall scapes, and the lax spreading pedicels of *A. septentrionalis*, var. *subulifera*, but the dark glandular pubescence of the var. *glandulosa*.

1d. *A. SEPTENTRIONALIS* L., var. *DIFFUSA* (Small) R. Knuth, Engl. Pflanzenreich, iv, Fam 237, 215 (1905). *A. diffusa* Small, Bull. Torrey Cl. xxv, 318 (1898) *Amadea diffusa* (Small) Lunell, Am Midl. Nat., iv, 504 (1916). Scapes several, 5–10 cm. or if slightly taller the scapes more than twice the length of the pedicels, which are stiff, markedly divergent, but not often much curved, calyx-lobes and base of the calyx-tube nearly glabrate. The commonest variety, known from Saskatchewan to Alaska, and southward in the mountains, from North and South Dakota and westward to Idaho and Nevada and southward to the Mexican boundary. Saskatchewan: Carlton to Edmonton, August, 1825, Drummond (H). Alberta: Elbow river, lat 49° 40', June–July, 1897, J. Macoun, No 23,480 (H and U), Milk River ridge, July 18, 1895, J. Macoun (C. No. 11,778). British Columbia: northern part, Western Union Telegraph Exploring Expedition, 1865–66, J. T. Rothrock, No 31 (U), near head of McGillivray creek, altitude 6,000 feet, Cascade mountains, August 18 and 19, 1916, J. M. Macoun (C Nos 91,008 and 91,009) Alaska on gravelly flats of the Teller, Reindeer station, August 19, 1901, F. A. Walpole, No 1,863 (U). North Dakota: Leeds, June 26, 1900, J. Lunell (H), Dunseith, August 13, 1911, E. T. Tufte, No 224 (R). South Dakota: moist flat near Redfern, elevation 5,700 feet, Black Hills National forest, May 12, 1910, John Murdock, jun., No 4,033 (H); Custer, altitude 5,500 feet, Black hills, June 3, 1892, P. A. Rydberg, No 864 (U). Montana: moist places, Boulder creek, June 25, 1883, F. Lamson Scribner, No. 144 (P and H), Deep creek, August 31, 1891, R. S. Williams, No 723 (U). Idaho: hill near Paso creek, Lost River mountains, August 15, 1895, L. F. Henderson, No 4,018 (U), southwest corner of Franklin basin, altitude 7,500 feet, Bear River range, July 25, 1910, Charles Piper Smith, No 2,229 (R). Wyoming: Battle lake, August 15, 1897, Aven Nelson, No. 4,151 (R); La Plata mines, August 30, 1898, Ehas Nelson, No 5,256 (R). Colorado: Los Pinos (Bayfield), May 16, 1899, C. F. Baker, No. 515 (R and U); moist swales, Hopi (Rabbit Ear) buttes, Routt county, July 17, 1903, L. N. Goodding, No 1,570 (P and R and U). Utah: moist places, Dyer mine, Uinta mountains, July 3, 1902, L. N. Goodding, No 1,250 (H and R and U), in protected nooks on side of mountain, Big Cottonwood canyon, altitude 8,500 feet, Salt Lake county. July 11, 1905, A. O. Garrett, No. 1,333 (H and R), Clayton peak, altitude 9,800 feet, Wasatch mountains, August 12–26, 1903, S. G. Stokes (U). New Mexico: Santa Fe canyon, altitude 8,000 feet, May 14, 1897, A. A. and E. G. Heller, No. 3,528 (H and U); near the west fork of Gila river, altitude 7,500 feet, Mogollon mountains, August 2, 1903, O. B. Metcalfe (U), in oak chaparral, vicinity of Chama, altitude 2,380–2,850 m., Rio Arriba county, July 9, 1911, P. C. Standley, No. 6,688 (U). Arizona: wet springy place, Wekersheim's cabin, Huachuca mountains, August 9, 1909, L. N. Goodding, No. 368 (H and R); Lynx creek, May 31, 1883, Henry H. Rusby, No. 5,222 (U); rolling, andesitic, recently pine-clad area, open westward, Barfoot park, altitude 8,000–8,250 feet, J. C. Blumer, No. 1,554 (U).

1e. *A. SEPTENTRIONALIS* L., var. *PUBERULENTA* (Rydb.) Knuth, Engi. Pflanzenreich, iv, Fam 237, 216 (1905) *A. puberulenta* Rydb. Bull. Torrey Cl. XXX, 260 (1903) *Amadea puberulenta* (Rydb.) Lunell, Am. Midl. Nat., iv, 504 (1916) Resembling var *diffusa* in all respects except that the calyx-lobes and the base of the calyx-tube are densely covered with short stellate hairs From Manitoba to Mackenzie river, and southward in the mountains, from North Dakota westward to Montana, and southward to the Mexican border Manitoba on open prairie, Stonewall, June 2, 1896, J Macoun (C No 12,277 and U); open prairies, Carberry, May 27, 1884, J M. Macoun (C No 15,861) Saskatchewan Palliser's Brit. N Am Expl Expedition, 1858, E Bourgeau (H), roadside, sandhills, north of Prince Albert, July 3, 1896, J Macoun (C No 12,769), gravelly places and open flat prairies, Crane lake, June 15, 1894, J Macoun (C No 5,319 and H) Alberta low prairie, Calgary, June 19, 1903, M. A Barber, No. 232 (H), altitude 4,500 feet, Banff June 12, 1906, F K Butters and C O Rosendahl, No 1,340 (H). Jumpingpound creek, June 14, 1897 (C. No 23,479), sandy banks, Lesser Slave lake, June 1, 1903, J M Macoun (C No 61,246 and H and U), Chipewyan, June 4, 1903 A E Preble and M Carey, No 2 (U) North Dakota in fields, Leeds, May 7, 1901, J. Lunell (R No 39,241), in fields, Leeds, May 7 and 19, 1902, J Lunell (H) South Dakota Custer, altitude 5,500 feet, Black hills, June 3, 1892, P A Rydberg, No 864 (H) Montana Bracket creek, June 2, 1901, Burle J Jones (H and U No 668,421), mountain meadows, altitude 7,000 feet, Gallatin basin, Bozeman, August 5, 1905, J. W Blankinship, ser I, No 337 (U), plains, Midvale, June 21, 1903 L M Umbach, No 112 (U) Wyoming rich ground, near Mammoth Hot Springs, altitude 6,200 feet, June, 1893, F H Burglehaus (U No 210,508), Centennial valley, June 8, 1895, Aven Nelson, No 1,244 (R), in dry, open place on a wooded slope, Glen creek, Yellowstone National park, A Nelson and E Nelson, No 5,609 (R) Colorado gravelly slopes, South Cottonwood gulch, altitude 10,500 feet, July 9, 1892, C S Sheldon No. 503 (U), hills, Larimer county, altitude 9,500 feet, July 18, 1895, C. F. Baker, No 6,733 (H) Utah Alta, Wasatch mountains, altitude 10,000 feet, August 7, 1879, M E Jones, No 1,206 (U), Big Cottonwood canyon, below Silver lake, June 29, 1905, P A Rydberg and E C Carlton, No 6,500 (R) New Mexico side of Grass mountain, altitude 9,000 feet, Pecos National forest, July 3, 1908, P C Standley, No 4,141 (U), White Mountain peak, August 1, 1901, E O Wooton (U)

1f. *A. SEPTENTRIONALIS* L., var. *SUBUMBELLATA* A Nelson, Bull Wyo. Exp Sta, xxviii, 149 (1896) *A. subumbellata* (Nels.) Small, Bull Torrey Cl XXV, 319 (1898) A variety of alpine habitats, with dwarfed scapes, not over 2 or 3 cm in height the pedicels short, stout, and few in number (1-6). From Alberta and British Columbia and south in the mountains to New Mexico, Arizona, and California. This seems to be the only variety of *A. septentrionalis* found in the Pacific tier of states Alberta Sulphur mountain, Banff, June 29, 1891 (C), lake Louise, July 20, 1904. J. Macoun (C. No. 68,722); Laggan (lake Louise), June 27, 1904, J Macoun (C. No. 68,721). British Columbia west summit of North Kootenay pass, July 26, 1883, Dawson (C No. 15,865), Kicking Horse pass, July 20, 1885, J. Macoun (C), Cornwall hills, July 28, 1894, J. McEvoy (C. No. 7,387), McLean mountain, near Lillooet, July, 1916, J. M. Macoun

(C. No. 91,010). Montana. stony detritus, altitude 11,000 feet, Lone mountain, Bozeman, August 6, 1905, J. W. Blankinship, ser. 1, No. 340 (P and U); Old Hollowtop, altitude 9,000 feet, near Pony, July 9, 1897, P. A. Rydberg and E. A. Bessey, No. 4,680 (H); heights above Carbonate draw, altitude 8,000 feet, July 13, 1904, R. T. Shaw, No. 306 (P and H and U). Idaho Hayden Exp., 1872 (U No 48,670), summit of Soldier mountains, altitude 11,800 feet, July 15, 1895, L. F. Henderson, No. 3,135 (U). Washington. Rocky Mountain summits, altitude 8,000 feet, lat. 49 degrees, 1861, Dr. Lyall (H), Oregon. alpine, Wallowa mountains, 1886, W. C. Cusick (H); subalpine ridges of Wallowa mountains, near the lake, July 29, 1899, W. C. Cusick, No. 2,269 (H and U). Wyoming. Union pass, August 13, 1894, Aven Nelson, No. 998 (H and U), on the naked gravelly summits, Dunraven peak, August 27, 1899, A. Nelson and E. Nelson, No. 6,682 (H and R and U). Colorado. Carson, altitude 11,000 feet, July 2, 1901, C. F. Baker, No. 300 (H and R and U); Bear Creek divide, west of mount Hesperus, altitude 11,000 feet, June 29, 1898, C. F. Baker, F. S. Earle, and S. M. Tracy, No. 222 (H and U), Ribbon lake, altitude 3,500 m., July 25, 1901, F. E. and E. S. Clements (H and U). Utah alpine parks, Fish lake, July 18, 1902, L. N. Goodding, No. 1,400 (H and R and U), gravelly soil, altitude 10,000-11,000 feet, La Sal mountains, May-October, 1899, C. A. Purpus, No. 7,036 (U). Nevada East Humboldt mountains, altitude 10,000 feet, September, 1868, Sereno Watson, No. 753 (H and U). California White mountains, altitude 13,000 feet, Mono county, July 22, 1886, W. H. Shockley, No. 452 (H), top of Grayback, altitude 11,480 feet, San Bernardino mountains, August 21, 1907, V. Bailey (U). New Mexico Santa Fe, 1847, A. Fendler, No. 548 (H), altitude 11,000 feet, Jemez mountains, September 4, 1906, Vernon Bailey, No. 1,029 (U). Arizona San Francisco mountain, August 23, 1889, F. H. Knowlton, No. 103 (U).

2 *A. OCCIDENTALIS* Pursh, Fl Am Sept, i, 137 (1814) *A. platysepala* Wootton and Standley, Bull Torr. Cl xxxiv, 519 (1907). *Amadea occidentalis* (Pursh) Lunell, Am Midland Nat, iv, 504 (1916). A small annual leaves borne in a basal rosette, linear to elliptic-lanceolate, often irregularly toothed, glabrous beneath, elsewhere clothed with short, white, stiff, usually simple, pubescence, 3-20 mm. long, 1-5 mm. broad scapes 1-many, erect or ascending, scabrous with a white stellate short pubescence, 1-7 cm. high bracts bright green and conspicuous, lanceolate or elliptic, 3-7 mm long, 1-4 mm. broad pedicels several, erect or ascending, scabrous with short stellate hairs, 0.5-3 cm. long calyx-tube campanulate, whitish or straw-coloured, contrasting prominently with the deltoid or broadly lanceolate, bright green, nearly equally long lobes, which are clothed with a short, white, simple pubescence. Dry sandy places, western Ontario south to Texas and from southern Saskatchewan and British Columbia south to Montana, Colorado, Utah, New Mexico, and Arizona. Ontario Sandy island, lake of the Woods, July 28, 1872, J. Macoun (C. No. 15,856) Wisconsin Baraboo, 1861, T. J. Hale (P and H) Illinois Kankakee, 1861, T. J. Hale (P and H), Peoria, 1872, F. Brendel (P and U), common, dry, gravelly soil, Peoria, F. E. McDonald (H). Minnesota on gneiss rocks in xerophytic plant societies, Montevideo, April 26, 1895, L. R. Moyer, No. 2,808 (U) Iowa Davenport, Dr. Parry (H),

Decora, May 19, 1893, E W D Holway, No. 586 (U) Missouri on the rocky summit of a hill in Cedar prairie, 10 miles from the garrison, Cedar creek, April 24, 1810, Nuttall (type U No 48,677), Independence, April 5, 1894, B F Bush, No. 259 (H and U) Arkansas Nuttall Louisiana: Nuttall. Manitoba cultivated ground, Brandon, June 11, 1896, J. Macoun (C No 12,727 and H and U) Saskatchewan Wood mountain, June 6, 1895, J. Macoun (C No 11,777) South Dakota Old Fort Look-out, Sutton Hayes (H); Hot Springs, altitude 3,500 feet, June 13, 1892, P A. Rydberg, No 865 (U). Nebraska in a prairie dog town, Thedford, Middle Loup river, June 15, 1893, P A Rydberg, No 1,299 (U), Hershey, May 8, 1903, C D Mell (U No 607,792) Kansas prairie, Riley county, April 13, 1895, J B Norton, No. 321 (H and U), Butler county, May 12, 1897, Benj H Smith (P). Oklahoma on the False Washita, between Fort Cobb and Fort Arbuckle, 1868, Dr Edward Palmer, No 171 (U) Texas light soils, Dallas, March, 1874, J Reverchon (Curtis N, Am Pl. No 1,794), (P and H and U) Montana Bozeman, May 13, 1901, E J Moore (H and U), uplands, Bozeman, June 16, 1905, J W Blankinship, ser I, No 339 (H and U), Great Falls, May 8, 1885, R S Williams, No. 279 (U) Colorado Los Pinos (Bayfield), May 17, 1899, C F Baker, No 514 (U), scarce, plains north of Golden City, 1870, E. L Greene, No 259 (H) Utah dry fields, Salt Lake county, May 2, 1908, A O Garrett, No. 2,231 (H) New Mexico 1847, A Fendler, No 548 (P), Organ mountains, Dona Ana county, March 3, 1907, E O Wooton and P C. Standley (U No. 564,002), on open hills, Kingston, March 30, 1905, O B. Metcalfe, No 1,547 (U) Arizona moist places of the southwestern plains and mountains, March and April, 1884, C G Pringle (part of type coll of *A. arizonica* Gray, H), Sabina canon, March 20, 1897, Myrtle Zuck (U No 664,220), Santa Catalina mountains, 1880, J G Lemmon (H) Alberta damp soil, altitude 2,200-2,500 feet, Rosedale camp, Rosedale, Marion E Moodie, No 831 (H) British Columbia: Spences Bridge, May 21, 1875, J Macoun, No 1,205 (C and H)

In segregating *A. platysepala* Wooton and Standley from *A. occidentalis* Pursh on the character of the width of the calyx-lobes, the assumption was made that Pursh's species was based on plants having the calyx-lobes of the narrowly deltoid type. It seems possible to make a division on this character into two different categories, but since, when separated into the two series, neither one coincides with any other good characters nor any natural geological or geographical divisions, they do not seem to deserve wide separation in botanical nomenclature. In any case, on examination of Nuttall's collection from Cedar Creek, Missouri, the type of *A. occidentalis* Pursh, which can be seen in the U S National Herbarium, will show that these plants are of the phase with broad calyx-lobes. Consequently *A. platysepala* must be treated as a synonym of *A. occidentalis*.

2a. *A. OCCIDENTALIS* Pursh, var **simplex** (Rydb.) n comb *A. simplex* Rydb., Bull. Torrey Cl. XL, 462 (1913) Differing from *A. occidentalis* in having the calyx-lobes narrowly deltoid or subulate. Occasional throughout the range of the species. Illinois open, gravelly slopes, Peoria, April, 1900, F. E. McDonald (P). Iowa Charles City, Arthur, (U No. 145,195) Saskatchewan Twelvemile lake, Wood mountain, June 6, 1895, J. Macoun (C No 11,777) North Dakota Towner, May

29, 1908, J. Lunell (U No. 607,881). South Dakota. Black hills near Fort Meade, May 28, 1887, W. H. Forwood, No. 51 (U). Oklahoma. Huntsville, April 15, 1896, Laura A. Blankinship (H and U). Montana. Missoula, May 5, 1897, M. J. Elrod and assistants, No. 33 (TYPE in Hb., N. Y. Bot. Gard., and fragment in H), Spanish basin, altitude 6,500 feet, June 23, 1897, P. A. Rydberg and E. A. Bessey, No. 4,682 (U). Utah. near Salt Lake City, May, 1882, M. E. Jones (H and U), Big Cottonwood canyon, May 3, 1909, Mrs. Joseph Clemens (H).

Dr. Rydberg in the description of *A. simplex* says it is "related to *A. occidentalis*, but the plant is more delicate, the scapes solitary, bearing a 1-4 flowered umbel with strongly ascending or nearly erect pedicels." The type material and the cited M. E. Jones material from Salt Lake City answer this characterization, but they are obviously very young, starved plants that grew in sterile habitats. This seems to explain the smallness of their leaves, their short, nearly erect pedicels, and their simple, delicate habit. They do have, however, the narrowly deltoid calyx-lobes that recur in many well-developed vigorous plants, with several scapes, from various parts of the broad range of *A. occidentalis*. Consequently, the name *simplex* is retained for the variety with these characters, even though the original conception of *simplex* was in a different sense.

2b. *A. OCCIDENTALIS* Pursh, var. **arizonica** (Gray) n. comb. *A. arizonica* Gray, Proc. Am. Acad., xvii, 221 (1882). A remarkable variety, of delicate texture, but large and sprawling scapes up to 5 cm. in height, pedicels lax and spreading, up to 5 cm. in length, calyx-lobes ovate-lanceolate, longer than the tube, arching-reflexed. Known only from the mountains surrounding Tucson, Arizona. Arizona. Santa Catalina mountains, April 19, 1881, C. G. Pringle, No. 330 (TYPE H), moist places of the southwestern plains and mountains, March and April, 1884, C. G. Pringle, in part (P and H), Sierra Tucson, April, 1884, W. F. Parish, No. 216 (H).

Pringle's collection, dated 1884, which was widely distributed, with a printed label, contains two things, *A. occidentalis* and the very distinct var. *arizonica*. Gray discovered this confusion, and in the Gray Herbarium separated the material and noted the fact on the sheet. The plant is treated as a variety here because in many characters, especially those of the bracts, the plant is identical with the series called *A. occidentalis*. It is, however, the best-marked extreme.

3. *A. ACUTA* Greene, Man. Bot. San Francisco bay, 238 (1894). *A. asprella* Greene, Pittonia, iv, 150 (1900). Leaves in a basal rosette, linear or linear lanceolate and entire, glabrous beneath, pubescent above, especially near the margins, with stiff, short, simple hairs, scapes 1-many, short, 1-4 cm. high, clothed with sparsely-branched stellate pubescence, which is coarser than in the allied species, bracts ovate lanceolate, with a short attenuate caudate tip, 1-5 mm. long, 0.5-2.5 mm. broad, pedicels stout, stiff and ascendent-divergent, likewise scabrous pubescent; calyx-tube obconic, the stiff subulate lobes spreading at the same angle as the sides of the calyx-tube. Oregon to California. Oregon: Rogue River valley, July 16, 1887, Thomas Howell (photograph in H and N). California: Berkeley hills, altitude 1,000 feet, Alameda county, April 5, 1902,

J. P. Tracy, No. 1,344 (H and R and U), Diablo mountains, April 10, 1878, J. G. Lemmon (H); Alcade, March 28, 1893, T. S. Brandegee (U No. 735,460); Crafton, J. G. Lemmon and C. C. Parry, No. 1,184 (H); San Bernardino, 1876, J. G. Lemmon (H)

A very distinct species, but not very generally recognized as such. Knuth in the Pflanzenreich cites it as a synonym of *A. occidentalis*. Under this he cites no west coast material, so it seems doubtful if he had seen any material of *A. acuta*.

A. asprella Greene from Oregon matches perfectly the earlier-described Californian plant.

A. elongata L. of Eurasia is similar in appearance to *A. acuta* and *A. occidentalis*, but differs from both in a number of technical points.

A. capillaris Greene and *A. filiformis* Retz are not considered in the body of this paper, but the author believes, with Dr. Rydberg, that there is no apparent basis for separating the American material as *A. capillaris* Greene, since it seems indistinguishable from *A. filiformis* Retz.

ANTENNARIA

ANTENNARIA **glabrifolia** Fernald, n. sp., planta laxe humifusa stolonibus flexuosis flagelliformibus ad 1 dm. elongatis, foliis basilaribus elliptico-oblancoelatis subacuminatis mucronatis, 2-5 cm. longis, 0.8-1.4 cm. latis, supra glabris perviridibus, subtus nervis lateralibus brevibusque prominentibus, caule florifero 2-3 dm. alto albidotomentoso, foliis caulinis 8-10 supra viridibus glabris vel glabratilancearibus 1.5-3 cm. longis, 1.3-4 mm. latis apice breviter subulato, capitulis femineis 4-6 corymbosis, involucre campanulato, 7-8 mm. alto, bracteis 4-seriatis, exterioribus 4 mm. longis oblongo-lanceolatis olivaceis apice glavis denticulatis, interioribus lanceolatis subintegris, stylo flavescente ramibus circa 0.5 mm. longis, planta mascula ignota.

Plant loosely humifuse, stolons flexuous, flagelliform, up to 1 dm. long; basal leaves elliptic-oblancoelate, subacuminate, mucronate, 2-5 cm. long, 0.8-1.4 cm. wide, glabrous and bright green above, the short lateral nerves prominent beneath, flowering stem 2-3 dm. high, white-tomentose, cauline leaves 8-10, glabrous or glabrate and green above, linear, 1.5-3 cm. long, 1.3-4 mm. broad, short-subulate at tip, pistillate heads 4-6, corymbose, involucre campanulate, 7-8 mm. high, bracts 4-seriate, the outer 4 mm. long, oblong-lanceolate, olivaceous, the denticulate tip creamy, the inner lanceolate, subentire, style yellowish, its branches about 0.5 mm. long, staminate plant unknown. Quebec sand dunes, Natashkwan, July 4, 1915, H. St. John, C. No. 90,769 (TYPE IN H).

Somewhat resembling the more southern *A. petaloidea* Fernald, but that species has the upper surfaces of the new rosette-leaves canescent-tomentose or arachnoid, the rosette-leaves cuneate-oblancoelate to spatulate-obovate, with the lateral nerves usually obscure; the middle and upper cauline leaves with a long-coloured subulate-aristate tip, and the corymbs larger, with 5 to 15 heads.

A. SPATHULATA Fernald, var. **continentis** Fernald and St. John, n. var., ab specie differt in foliis caulinis 4-5 scarioso-appendiculatis, bracteis 9-10 mm. altis.

Differing from the species in having four or five of the upper cauline leaves scarious-appendaged, and in having the involucre bracts 9-10 mm. in height; the species, on the other hand, has only one or two of the upper leaves scarious-appendaged, and the involucre bracts 6-8 5 mm in height. Quebec sand dunes, Natashkwan, July 4, 1915, H St John, C No 90,768 (TYPE H).

This very local plant of the south shore of Saguenay county seems to be conspecific with *A. spathulata* of Newfoundland, but differing in the characters stated above and occupying an isolated area. The Natashkwan plant is set off as a distinct variety.

ANNOTATED LIST OF SPECIES KNOWN TO GROW ON THE NORTH SHORE OF THE GULF OF ST LAWRENCE

All names in brackets are of species which have been recorded as from this coast, but which are excluded, because of a misidentification of the specimen or a recent change of name, or because of some other confusion as to the exact significance of the record.

The names in large and small capitals are those of introduced plants.

When a species is known from the region only by one or very few collections, no general statement of habitat or range is given, and all the specimens are cited. When a plant is sufficiently common or well known in occurrence, a statement of its habitat, comparative abundance, and distribution follows directly after the name of the species. In such cases, only a few representative specimens are cited.

To indicate the herbarium in which the individual sheets cited can be found, the same notation is employed as used under the heading "Taxonomic revisions," which immediately follows the explanation of the system.

When a sheet is cited with a number like C No 90,362 without the collector's name, it is one of the author's collections.

When the name of a place is given without any further data, the species in question was observed there by the author but not collected.

An abbreviation such as (B³) is a reference to the article containing the notes in question. To obtain the author and title, consult the "Bibliography" and look under B, or whatever letter is sought.

POLYPODIACEÆ (FERN FAMILY)

Woodsia ilvensis (L.) R Br Granitic rocks Brest rivière à la Truite, cleft in rocks, C No 90,018

W. alpina (Bolton) S F Gray Mingan islands île du Havre, D N. Saint-Cyr (Q) (*W. hyperborea* R. Br.).

[*W. hyperborea* R. Br.] of D N Saint-Cyr is *W. alpina*

Cystopteris fragilis (L.) Bernh Shaded rocks throughout Mingan islands île Ste. Geneviève, D. N. Saint-Cyr (Q) Petit-Mécatina. wet rock cleft, C. No 90,017.

[*C. bulbifera* (L.) Bernh] Mingan seignory Mingan river, fall of, D. N. Saint-Cyr Specimen not found.

Pteris nodulosa (Michx.) Nieuwland. Mingan seigniory Sheldrake, D N Saint-Cyr Specimen not found, but record is credible (*Struthiopteris germanica*)

[*Struthiopteris germanica* Willd.] of D N Saint-Cyr is the preceding.

Onoclea sensibilis L Occasional in alluvial habitats Mingan seigniory rivière au Tonnerre, D N Saint-Cyr (Q) Lagorgendière Romaine wet woods, C No 90,020

Thelypteris spinulosa (O F Muell.) Nieuwl Abundant throughout the coast

T. fragrans (L.) Nieuwl Letellier Seven Islands, C B Robinson, No 879 (C and H and N)

T. Phegopteris (L.) Slosson (*Phegopteris polypodioides* Fée) Wet or shaded rocks, throughout

T. Dryopteris (L.) Slosson (*Phegopteris Dryopteris* (L.) Fée) Mossy woods, throughout

T. Robertiana (Hoffm.) Slosson Mingan islands abundant, Eskimo island (île au Marteau), base of limestone cliff, C No 90,008

[*Aspidium spinulosum* Sw.] *Thelypteris spinulosa*

Athyrium angustum (Willd.) Presl, var *rubellum* (Gilbert) Butters Charnay Etamamiou river, alder swamp, C No 90,013

[*Phegopteris Dryopteris* (L.) Fée] *Thelypteris Phegopteris*

[*P. polypodioides* Fée] *Thelypteris Phegopteris*

Asplenium viride L Mingan seigniory Betchouane, cleft in limestone rocks, C No 90,012

[*A. Filix femina* (L.) Bernh.] *Athyrium angustum*, var *rubellum*

Cryptogramma Stelleri (Gmel.) Prantl Mingan islands and Ponteaux-Esquiaux wet limestone cliffs Eskimo island wet limestone cliffs, C No 90,011 Also at the strait of Belle Isle, on the Labrador side of Blanc-Sablon river

[*Pellaea gracilis* Hook.] See preceding

Pteridium latiusculum (Desv.) Maxon Warm dry hillsides, infrequent Rivière au Tonnerre D N Saint-Cyr Boisbédert baie des Moutons, grassy hillside, C No 90,010

[*Pteris aquilina* L.] *Pteridium latiusculum*

Polypodium vulgare L Letellier Seven Islands, C B Robinson, No. 752 (C and N) Mingan seigniory Mingan river, falls of, D N Saint-Cyr This specimen was not found in the herbarium (Q), but the record is credible

[*P. Dryopteris* L.] *Thelypteris Dryopteris*

[*P. Phegopteris* L.] *Thelypteris Phegopteris*

OSMUNDACEÆ (FLOWERING FERN FAMILY)

Osmunda Claytoniana L Wet woods, especially near a river bank, not frequent Rivière au Tonnerre D N Saint-Cyr, no specimen found. Brouague Shekatika river, edge of thicket on island in, C No. 90,021.

O. cinnamomea L Occasional at the edge of wet thickets or on hillsides. Rivière au Tonnerre D N Saint-Cyr (Q). Île Ouapitagone tundra, C. No 90,022.

OPHIOGLOSSACEÆ (ADDER'S TONGUE FAMILY)

Botrychium Lunaria L. Occasional in grassy border above the beach. Mingan seigniory: Betchouane, meadow, C. No 90,025. Charnay pointe au Maurier, grassy top of sand beach, C. No. 90,024. Archipel du Vieux-Fort recorded from Bonne-Espérance, W. A. Stearns (St¹) Brest. Brador, gravelly thicket back of strand, M. L. Fernald and K. M. Wiegand; C. No 2,349 (H).

B. ramosum (L.) Asch. Letellier pointe au Basque, in sand near, Seven Islands, C. B. Robinson, Nos 830 and 836 in part (*B. neglectum* Wood) (C). Natashkwan sand dunes, C. No 90,026

B. lanceolatum (Gmel.) Ångström. Letellier pointe au Basque, growing in sand near, Seven Islands, C. B. Robinson, No 836 in part (C and N). See *Rhodora*, xx, 19 (1918). Mingan seigniory Mingan river, mouth of, Wm. Palmer (U).

B. ternatum (Thunb.) Sw., var. *rutæfolium* (A. Br.) D. C. Eaton. Letellier pointe au Basque, in sand near, Seven Islands, C. B. Robinson, No. 829 (C and N). St. Vincent Netagamou river, sand dunes at mouth of, C. No 90,027

B. virginianum (L.) Sw., var. Apparently an undescribed variety, but known only by this one over-mature collection. See *Rhodora*, xix, footnote 210 (1917). Mingan seigniory Betchouane, grassy shore, C. No 90,028

EQUISETACEÆ (HORSETAIL FAMILY)

Equisetum arvense L. Wet thickets, especially in river valleys, general Mingan seigniory Pointe-aux-Esquimaux, C. W. Townsend (H). Brest. Jones point, swale on hillside, C. No 90,029

E. arvense, var. *decumbens* Meyer. Mingan seigniory Pointe-aux-Esquimaux, sandy bank, C. No 90,031

E. sylvaticum L., var. *pauciramosum* Milde. Southern Labrador. Storer (H)

E. sylvaticum, var. *pauciramosum*, f. *multiramosum* Fernald. Wet woods and thickets, general Mingan seigniory C. W. Townsend (H). Lagorgendière Romaine, wooded bottomland, C. No 90,032.

E. palustre L. Wet banks of larger rivers. Natashkwan river common from mouth to 80 miles up, C. W. Townsend (H). St. Augustin river sedgy river bank, C. No 90,033.

E. palustre, var. *nigridentis* St. John. Lagorgendière. Romaine, muddy edge of pool in tundra, C. No 90,034

E. limosum L. Occasional in ponds or by edge of streams, throughout. Mingan seigniory Mingan river, D. N. Saint-Cyr. St. Augustin river sedgy river bank, C. No. 90,035. Brest Blanc-Sablon, on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 2,363 (H).

[*E. fluviatile* L.] *E. limosum*.

[*E. hyemale* L.] Recorded from Mingan islands, D. N. Saint-Cyr. No specimen found.

E. scirpoides Michx Deep woods Known only from Mingan islands fle Ste Geneviève, mossy woods, C No. 90,038, recorded by D N Saint-Cyr Also on the Newfoundland-Labrador side of the strait of Belle Isle

LYCOPODIACEÆ (CLUB MOSS FAMILY)

Lycopodium Selago L Mossy banks, infrequent, from Charnay eastward to the strait of Belle Isle Charnay fle Watagheistic, mossy bank, C No 90,040. Brest

L. Selago, var *appressum* Desv Exposed mossy crests and hilltops, general. Mingan seigniory Piashti bay, tundra, C No 90,042. Bois-hébert mossy hillside, C No 90,041

L. Selago, var. *patens* (Beauv) Desv Bois-hébert baie des Moutons, wooded brookside, C No 90,039

[*L. lucidulum* Michx] Erroneously recorded by J Macoun (M) as collected by S R. Butler on Caribou island Neither Butler (B²) nor W A Stearns (S¹) lists the species

L. annotinum L. Thickets and borders of woods, general Mingan seigniory Mingan river, D N Saint-Cyr (Q) Charnay pointe au Maurier, thicket, C No 90,043

L. annotinum, var *pungens* (La Pylaie) Desv Dry or mossy thickets, general Mingan seigniory Pointe-aux-Esquimaux, sandy thicket, C No. 90,044

L. clavatum L Sandy banks, especially near river mouths, occasional Mingan seigniory Mingan river, D N Saint-Cyr (mixed with *L. annotinum*) (Q). St Vincent Netagamiou river, sandy bank, C. No 90,048 Brest.

L. clavatum, var *monostachyon* Grev. and Hook Dry hillsides Known from Bois-hébert baie des Moutons, rocky hillside, C No 90,019. Observed at Mingan

L. clavatum, var. *megastachyon* Fernald and Bissell Dry woods, from two localities Seven Islands C B Robinson, No 839 (H) Natashkwan evergreen woods on sand dunes, C No 90,050

L. obscurum L Mossy woods, eastward as far as Shekatika Seven Islands C B Robinson, No 886 (H) Mingan seigniory Pointe-aux-Esquimaux, C. W. Townsend (H) Brouague Petite rivière Coxipi, mossy evergreen woods, C. No 90,051

L. obscurum, var *dendroideum* (Michx) D C Eaton Eskimo river (St. Paul river). J A Allen (called *L. dendroideum* Michx) (Hb Conn. Agric. Exp. Sta., New Haven) Recorded by D. N Saint-Cyr from Eskimo island

L. sitchense Rupr Dry sandy hills, throughout Mingan seigniory Pointe-aux-Esquimaux, sandy thicket, C No 90,053 Brouague Petite rivière Coxipi, dry mossy hills, C No 90,052

L. complanatum L Sand dunes or dry thickets, throughout Seven Islands D N. Saint-Cyr (*L. sabinæfolium* Willd). Mingan seigniory Pointe-aux-Esquimaux, C W Townsend (H). St Vincent Netagamiou river, sand dunes at mouth of, C. No 90,055 Brest on the gneiss plain, among bushes, M L Fernald and K M. Wiegand, No 2,392 (H)

L. complanatum, var *flabelliforme* Fernald Mingan seigniory: Mingan harbour, D. N. Saint-Cyr (*L. complanatum*) (Q).

[*L. sabinæfolium* Willd.] *L. complanatum*

SELAGINELLACEÆ

Selaginella selaginoides (L.) Link. Mingan islands and strait of Belle Isle, grassy banks. Mingan seignory. Pointe-aux-Ésquimaux, wet rocks, C. No 90,057. Brest anse des Dunes, grassy hollow, C. No 90,056.
S. rupestris (L.) Spreng. Seven Islands. C. B. Robinson, No 915 (H).

ISOËTACEÆ (QUILLWORT FAMILY)

Isoetes echinospora DuRoi, var. *Braunii* (DuRoi) Engelm. Shallow ponds, general. Boishébert base des Moutons, under one foot of water, hillside pond, C. No 90,058. Lagorgerdière. Olanoshibou river, tidal pool at mouth of, C. No 90,061.

TAXACEÆ (YEW FAMILY)

Taxus canadensis Willd. Deep woods, as far east as Natashkwan. Mingan islands. Île au Bouleau. D. N. Saint-Cyri. Île Ste. Geneviève, wooded pond shore, C. No 90,062. Observed at Seven Islands bay and Natashkwan.

[*T. baccata* L., var. *canadensis* Gray.] *T. canadensis*

PINACEÆ (PINE FAMILY)

[*Pinus Strobus* L.] "East as far as Mingan," and so represented on his map. R. Bell (B³).

Pinus Banksiana Lam. Seven Islands. D. N. Saint-Cyri (Q), C. B. Robinson (C). Mr. Maloney of Mingan told the writer of a single tree growing 9 miles inland from Mingan. The record seems trustworthy.

Larix laricina (DuRoi) Koch. Bogs and wet woods, common but only as shrubs or small trees.

[*L. americana* Michx.] *L. laricina*

Picea canadensis (Mill.) BSP. Forming woods, especially on the sandy bottomlands, and edge of sand dunes, general.

[*P. rubra* (DuRoi) Dietr.] C. W. Townsend records the red spruce at Pointe-aux-Ésquimaux (T³ 15 and 217). At many places on the coast are spruces with yellowish-green needles of shape and size quite similar to those of the tree called *P. rubra*. In all of these examined the cones were definitely those of *P. mariana*. It would be surprising to find the more southern *P. rubra* in this locality.

P. mariana (Mill.) BSP. Bogs and mossy hillsides, the commonest tree, forming dense, low forests, everywhere.

[*Abies nigra* Pon.] *Picea mariana*

[*Abies alba* Michx.] *Picea canadensis*

Abies balsamea (L.) Mill. Forming the forest in the drier habitats, especially back from the coast, everywhere.

[*Juniperus communis* L.] *J. communis*, var. *montana*

Juniperus communis L., var. *montana* Art. Dry and exposed habitats throughout.

J. horizontalis Moench Exposed and usually dry habitats, common as far east as Mingan islands, local from there to the strait of Belle Isle. Mingan seigniory Pointe-aux-Fsquimaux, C W Townsend (H) Archipel du Vieux-Fort île Herlé, rocky crest, C No 90,064

[*J. Sabina* L. var *procumbens* Pursh] *J. horizontalis*

SPARGANIACEÆ (BUR-REED FAMILY)

Sparqantum diversifolium Graebn Mingan seigniory Watlashu, D N Saint-Cyr (*S. simplex* Huds. var *genunum* Gr.) (Q)

[*S. simplex* Huds. var *genunum* Gr.] *S. diversifolium*

S. angustifolium Michx Shallow ponds and streams general Recorded by Ablé J B A Ferland from Boshébert, Tabatière, 1859 Archipel du Gros-Mécatina Tête à la Baleine, C No 90,075

[*S. simplex* Huds. var *angustifolium* Gr.] *S. angustifolium*

S. hyperboreum Laest Shallow ponds, occasional throughout. Natashkwan grassy pond, C No 90,080

POTAMOGETONACEÆ (PONDWILD FAMILY)

Potamogeton natans L Mingan islands île à la Chasse, in 5 feet of water, small pond, C No 90,081

P. ephedrus Raf Deep slow-flowing brooks occasional Mingan, Corcoachou, pointe au Maurier, and Briouague Petite rivière Coqui, shallow brook, C No 90,082

P. ephedrus, var *cayugensis* (Wieg.) A Benn Brest Brador, deep brook, M L Fernald and K M Wiegand No 2,440 (H)

P. alpinus Balbis Shallow ponds, known from Natashkwan pond in sand dunes, C No 90,083 and 90,084 Archipel Ouapitagone île Ouapitagone, pool in tundra, C No 90,085

P. heterophyllus Schreb Natashkwan slough in sand dunes, C No 90,086

P. perfoliatus L var *gracilis* Fries Brackish water, occasional Natashkwan, Nctagamou river, and Brest Blanc-Sablon river, shallow, sandy-bottomed pools, M L Fernald and K M Wiegand, No 2,450 (H), and Blanc-Sablon river, C No 90,087 These are like the European species and different from the American *P. hypoleucoides* Fernald in having heavy peduncles and the veins of the leaves prominent

P. pusillus L Slow-flowing water, known only from Brest Blanc-Sablon river, shallow, sandy-bottomed pools, M L Fernald and K M Wiegand, No 2,455 (H)

P. pusillus, var *Sturrockii* A Benn Charnay pointe au Maurier, deep, slow brook in tundra, C No 90,090

P. pusillus, var *tenuissimus* M and K Shallow, quiet waters, known from Mingan seigniory lagoon from Mingan river, C No 90,088 Brest shallow pond, Lougue pointe, C No 90,089

P. pectinatus L Charnay rivière Etamamicu, pool in brackish marsh, C No 90,091

P. filiformis Pers., var. *borealis* (Raf.) St John. Shallow ponds, common at Mingan islands and strait of Belle Isle, but seen at only one station between, Etamamiou. Mingan islands: île à la Chasse, in 5 feet of water, small pond, C No 90,092 Brest Longue pointe, shallow pond, C. No. 90,093

P. moniliformis St John. Brest rivière Blanc-Sablon, shallow, sandy-bottomed pools, M L Fernald and K. M Wiegand, No 2,463 (H), rivière Blanc-Sablon, above tide-mark, C No 90,094

Zannichellia palustris L Brackish pools, at mouths of rivers, eastward as far as Natashkwan Mingan Natashkwan Little Natashkwan river, brackish pool in marsh by, C. No 90,095

Ruppia maritima L., var. *rostrata* Agardh Natashkwan pool in salt marsh, C. No 90,097 Charnay rivière Etamamiou, tidal pool, C No. 90,096.

R. maritima, var. *subcapitata* Fernald and Wiegand. Brackish pools, eastward as far as Shekatika Seven Islands C B Robinson, No 916 (H) Charnay pointe au Maurier, shallow tidal pool, C. No. 90,099 Brouague. Robin bay, brackish pool, C No. 90,100.

Zostera marina L. Sheltered bays Sterile material observed at numerous points

Z. marina, var. *angustifolia* Hornem Shallow bays and inlets. Seven Islands C B Robinson, No 733 (H) Mingan seigniory Pointe-aux-Esquimaux, filling shallow bay, C. No 90,101 Charnay pointe au Maurier, shallow bay, C Nos 90,102 and 90,103

JUNCAGINACEÆ (ARROW GRASS FAMILY)

Triglochin palustris L Brackish marshes, occasional. Etamamiou, and Brouague Shekatika river, tidal mud at mouth of, C. No. 90,104. W. A Stearns reports it, "in the interior rare, in marshes" (S').

T. maritima L Brackish shores, throughout

Scheuchzeria palustris L Natashkwan sphagnum bog, C No 90,107

ALISMACEÆ (WATER-PLANTAIN FAMILY)

Sagittaria heterophylla Pursh. Mingan seigniory Mingan river, shallow lagoon from, C No 90,108

GRAMINEÆ (GRASS FAMILY)

[*Panicum capillare* L.] D. N. Saint-Cyr records this from baie des Homards In the collection (Q) there is a spray from a panicle of *Panicum capillare* mixed with *Agrostis hyemalis* var. *geminata* (called *A. scabra*) which is recorded as coming from Sheldrake river, is labelled on the cover as from rivière au Tonnerre, and under the plant is a loose slip indicating that it comes from baie des Homards. This baie des Homards is southwest of Seven Islands, just outside of our limits In any case the data is too confused to win credence

ANTHOXANTHUM ODORATUM L. D. N. Saint-Cyr records this from Mingan islands, Ile Ste. Geneviève. This island is unsettled except for a fisherman's temporary camp, and not a place where one would expect to find introduced plants. Specimen not found. There is no reason, however, to discredit this record.

Phalaris arundinacea L. This is recorded from Mingan seigniorv: pointe Sauvage, baie du Pillage, July 25, 1860, J. Richardson (R¹). It is known from Gaspe and Newfoundland and is not unlikely here.

Hierochloa alpina (Sw.) R. and S. Exposed hill crests, Petit-Mécatina and eastward to the strait of Belle Isle. Petit-Mécatina rocky crests, C. No. 90,109. Baie des Moutons and Brest Jones point, turfey hill crests, C. No. 90,110.

H. odorata (L.) Wahlenb., var. *fragrans* (Willd.) Richter. Rocky or marshy seashores, general.

Milium effusum L. Recorded from rivière au Tonnerre. D. N. Saint-Cyr. No specimen found. Brest. Blanc-Sablon, wet limestone and calcareous sandstone terraces, M. L. Fernald and K. M. Wiegand, No. 2,489 (H).

Muhlenbergia racemosa (Michx.) BSP. Mingan islands. Ile Ste. Geneviève, boggy thicket, C. No. 90,113.

PHEUM PRATENSE L. Sparingly introduced. Bougainville. St. Augustin, near the Hudson's Bay post, C. No. 90,114.

P. alpinum L. Strait of Belle Isle, grassy slopes, region of sedimentary rocks. Archipel du Blanc-Sablon. Greenly island, J. A. Allen (in Hb. Conn. Exp. Sta., New Haven). Brest. Blanc-Sablon, wet banks, limestone and calcareous sandstone terraces, M. L. Fernald and K. M. Wiegand, No. 2,497 (H), pointe à Peau, grassy slope, C. No. 90,115, Brador, wet slopes, M. L. Fernald and K. M. Wiegand, No. 2,498 (H).

Alopecurus aristulatus Michx. Wet river or pond shores. Known from St. Augustin river sand bar, C. No. 90,116.

A. aristulatus, var. *Merriani* (Beal) St. John. Brest. anse des Dunes, sprawling on sandy pond shore, C. No. 90,117.

Agrostis alba L., var. *maritima* (Lam.) G. F. W. Meyer. Exposed sands near the sea, known as far east as Natashkwan. Mingan seigniorv. Pointe-aux-Esquimaux, roadside, C. No. 90,119. Natashkwan sprawling on sand flat, C. No. 90,118.

A. hyemalis (Walt.) BSP., var. *geminata* (Trin.) Hitchc. Wet meadows, general. Collection of D. N. Saint-Cyr, recorded as from Sheldrake river, the cover containing the sheet is labelled rivière au Tonnerre, and a loose ticket under sheet indicates baie des Homards. The plant is this species (called *A. scabra*) but it is difficult to tell where it came from.

Another collection by D. N. Saint-Cyr (called *A. canina* L.) was recorded as from baie des Homards, but a loose ticket under the plant says "Battures de Sable, Mingan river." Ile. Kécarpou. sphagnum bog, C. No. 90,121. Chevalier St. Paul, edge of marsh, C. No. 90,120.

[*A. canina* L.] See *A. hyemalis*, var. *geminata*. Recorded by W. A. Stearns from Labrador, 1875, but the plant is *A. borealis*.

[*A. scabra* Willd.] Record of D. N. Saint-Cyr. Plant is *A. hyemalis*, var. *geminata*.

A. borealis Hartm. (*A. paludosa* Scribn.) Exposed rocky and turf crests, from Ouapitagone eastward to the strait of Belle Isle Ile Ouapitagone rocky crest, C No 90,123 Archipel du Vieux-Fort Bonne-Espérance, J. A. Allen, No 22 (H) Brest Jones point, sandy pond shore, C No 90,122, Blanc-Sablon, A C Waghorne (U No 217,943) W. A. Stearns from Labrador (called *A. canna* L.) (U)

[*A. paludosa* Scribn.] U S Div Agrost., Bull., xi, 49 and F 7 (1898) This was described from a collection by A C Waghorne, September 25, 1893, Blanc-Sablon It is described as awnless, and Hitchcock, Bur. Pl Indust., Bull. lxxviii, 53 (1905), citing it in synonymy calls it "an awnless form of *A. borealis*" The plant may yet prove for some reason to be distinct The collection from Ouapitagone, C No 90,123 is a very close match with the Waghorne plant

Calamagrostis canadensis (Michx.) Beauv. Grassy shores, apparently throughout Reported from Mingan seigniory pointe Sauvage, baie du Pillage, J Richardson (R¹) Natashkwan river C W Townsend, in part (H)

C. canadensis, var. *acuminata* Vasey Recorded from Eskimo river J A Allen, No 19 See U S Div Agrost., Bull. xi, 30 (1898)

C. Langsdorffii (Link.) Trin. Grassy shores and borders of woods, very common throughout Lagoendière Romaine, grassy brookside, C No 90,127 Brest Blanc-Sablon, on the gneiss plain, in sand, M L Fernald and K M Wiegand, No 2,539 (H)

C. neglecta (Ehrh.) G. M. and S. Wet shores and borders of woods, general Brouague Shekatika river, turf border at mouth, C No 90,124

[*C. labradorica* Kearney] Bull. U S Div Agrost., xi, 38-9 (1898) The key character separating this from *C. hyperborea* and *C. crassiglumis* is "Not exceeding 5 dm in height panicle slender, much interrupted toward base, awn not nearly equaling glume" On examining the type specimen Bonne-Espérance, July 29, 1882, J A Allen, No 18 (U), it was seen that the two mature panicles were definitely interrupted Of the spikelets examined two had no awns at all, one had a very short awn, one-sixth the length of the lemma, attached one-third of the distance from the summit of the lemma, one had an awn attached near the base of, and nearly equaling, the lemma This plant seems better treated as *lapponica*

C. lapponica Kunth Archipel du Vieux-Fort Bonne-Espérance, J. A. Allen, No 18 Brest Blanc-Sablon, gravelly thicket back of strand, and abundant in sand or bogs, on the gneiss plain, M L Fernald and K M Wiegand, Nos 2,551 and 2,547 (H)

C. hyperborea Lange Rocky and grassy shores, throughout. Archipel Ouapitagone Romaine (Vieille Romaine), rocky shore, C No 90,125

Ammophila breviligulata Fernald Coastal sand dunes, very infrequent Mingan and Natashkwan outer sand dunes, C No 90,128 Brest Brador, sand dunes, M L Fernald and K M Wiegand, No 2,562 (H)

Cinna latifolia (Trev.) Griseb. Meadows and borders of woods, in the more sheltered parts, general Boishébert Tabatière, meadow, C No. 90,129 Brest Blanc-Sablon, limestone and calcareous sandstone terraces, M L Fernald and K M Wiegand, No 2,564 (H)

Trisetum spicatum (L.) Richter, var *Maidenii* (Gandoger) Fernald. Dry banks, occasional throughout Seven Islands fle Manowin, D. N. Saint-Cyr (called *T. subspicatum* Beauv., var *molle* Gray) (Q) Mingan seigniory Pointe-aux-Esquimaux, rocky limestone headland, C. No. 90,132 Lagorgendière Romane, rocky river bank, C. No. 90,130.

T. spicatum, var *pilosiglume* Fernald Turfy slopes in region of calcareous sandstone rocks, strait of Belle Isle Brest Brador, damp calcareous rocks, M. L. Fernald and K. M. Wiegand, No. 2,570 (H); pointe à Peau, dry turf, C. No. 90,133

Deschampsia flexuosa (L.) Trin. Grassy banks and borders of woods, throughout Goyinish fles Boisées de Cap Blanc, Washtawouka, rocky shore, C. No. 90,138 Briouague Robin bay, border of woods, C. No. 90,135

D. flexuosa, var *montana* (L.) Ledeb. Archipel du Vieux-Fort Bonne-Espérance, J. A. Allen (in Hb. Conn. Exp. Sta., New Haven)

D. caespitosa (L.) Beauv. Brest Blanc-Sablon, brackish shore, M. L. Fernald and K. M. Wiegand, No. 2,583 (H) D. N. Saint-Cyr records this from Sheldrake river, August 1882 (called *Aira caespitosa* L.), no specimen found

D. atropurpurea (Wahl.) Scheele Lagorgendière Romane, rocky river bank, C. No. 90,139

[*Aira flexuosa* L.] *Deschampsia flexuosa*

[*Aira caespitosa* L.] *Deschampsia caespitosa*

Danthonia spicata (L.) Beauv. Mingan seigniory Mingan, grassy edge of woods, C. No. 90,110

[*Spartina Michauxiana* Hitchc.] This is recorded from Rivière Pentecôte basin August 28 1884. The cover containing the plant is marked rivière Pentecôte, but a ticket under the plant says "lac St Jean, A 13/88" *S. Michauxiana* grows from northern Maine to Tadoussac at the mouth of the Saguenay, and westward. It seems probable that the plant in question came from lake St. John as the ticket would indicate.

[*S. cynosuroides* Willd.] *S. Michauxiana*

Spartina alterniflora Loisel. Natashkwan havre des Canadiens, salt marsh, C. No. 90,141

Catagosa aquatica (L.) Beauv. Spring-fed marshes by the shore, from fles Netagamou eastward to the strait of Belle Isle Archipel du Petit-Mécatina Harrington, springy marsh near the shore, C. No. 90,142 Brest Blanc-Sablon on the gneiss plain in wet places, M. L. Fernald and K. M. Wiegand, No. 2,600 (H)

Melica striata (Michx.) Hitchc., f. *albicans* Fernald Mingan islands, fle Ste Geneviève, boggy woods, C. No. 90,143

POA ANNUA L. Introduced, not spreading from the settlements, general Boishébert Tabatière, wet dooryard, C. No. 90,798

P. eminens J. S. Presl Gravel beaches, turfey shores, and rocky ledges near the sea, general Mingan islands fle Ste Geneviève, D. N. Saint-Cyr, No. 69 (called *P. glumaris* Trin.) (Q) Archipel Washicoutai fle Triple, wet turf, C. No. 90,800 Archipel du Vieux-Fort Bonne-Espérance, J. A. Allen (H)

[*P. glumaris* Trin.] *P. eminens*

P. alpina L Mingan islands and strait of Belle Isle calcareous ledges. Mingan islands île du Havre, D N Saint-Cyr (Q). Mingan seigniory: Pointe-aux-Esquimaux (H), and C No 90,801. Reported by W. A Stearns from St Paul Brest Blanc-Sablon, limestone and calcareous sandstone terraces, M L Fernald and K M Wiegand, No 2,659 (H).

P. alpina, var *Bivonæ* (Parl) St John Mingan islands Eskimo island, limestone sea-cliffs, C No 90,802, intermediate material found at Eskimo island, C No 90,803

P. glauca Vahl Brest Blanc-Sablon, limestone and calcareous sandstone terraces, M L Fernald and K M Wiegand, No 2,651 (H) Archipel du Vieux-Fort Bonne-Espérance, J A Allen, No 9 (Hb Conn Agric Exp Sta, New Haven)

P. nemoralis L Grassy banks, known from Chevalier to the straits, probably more widely dispersed Archipel du Vieux-Fort Bonne-Espérance, J A Allen, No 30 (H) Chevalier St Paul, doorvard, C No 90,804 Brest rivière à la Truette, grassy hillside, C No. 90,805.

P. palustris L (*P. triflora* Gilib) Grassy shores, apparently throughout Charnay rivière Etamamiou, grassy shore, C No 90,807 Chevalier St Paul, grassy shore, C No 90,806

P. pratensis L Grassy shores, banks, edge of woods, common throughout Natashkwan sand dunes, C No. 90,809. Pontchartrain Vieux-Fort, grassy shore, C No 90,813

[*Glyceria melicaria* (Michx) Hubbard] Mingan islands île du Fantôme, D N Saint-Cyr (The plant is called *G. elongata* and published as from rivière Pentecôte If it came from there it should be excluded from this list)

[*G. elongata* Trin] *G. melicaria*

G. canadensis (Michx) Trin. Grassy brooksides, eastward as far as Brouague Known from rivière au Tonnerre D N Saint-Cyr (Q) Brouague Petite rivière Coxipi, swampy brookside, C. No 90,144.

G. nervata Trin Wet thickets, eastward as far as Brouague. Recorded from rivière au Tonnerre D N Saint-Cyr, August, 1882 Specimen not found Mingan islands île Ste Geneviève, boggy thicket, C No 90,146 Brouague Petite rivière Coxipi, alder thicket by, C No. 90,145

G. nervata, var *stricta* Scribn Region of Mingan islands and strait of Belle Isle, wet meadows or pond shores Mingan islands île du Havre, pond shore, C No 90,148 Mingan seigniory Betchouane, swale, C No 90,147 Brest Blanc-Sablon, limestone and calcareous sandstone terraces, M L Fernald and K M Wiegand, No 2,609 (H).

Glyceria Fernaldi (Hitche) St John Lagorgendière Romaine, sprawling on muddy brookside, C No 90,139 Charnay rivière Etamamiou, marshy brookside, C No 90,150

[*G. maritima* Wahl] of D N Saint-Cyr is *Puccinellia paupercula* var. *alaskana*

Puccinellia paupercula (Holm) Fernald and Weatherby Archipel Ouapitagon Romaine, strand, C No 90,154 Charnay pointe au Maurier, rocky shore, C Nos 90,152 and 90,153 Archipel de Kécarpoui île du Petit Rigolet, salt marsh, C. No 90,151

P. paupercula, var *alaskana* (Scribn and Merr) Fernald and Weatherby Mingan islands île du Havre, rocky limestone shore, C. No 90,155; île Ste Geneviève, D N. Saint-Cyr (called *Glyceria maritima* Wahl.) (Q)

P. coarctata Fernald and Weatherby Lagorgendière Romaine, rocky bank, C No 90,156 Recorded from baie au Saumon, J A Allen See Rhodora, xviii, 18 (1916) Brest Jones point, rocky shore C No 90,157.

[*Festuca octoflora* Walt] Recorded from Sheldrake river, D N Saint-Cyr, August 22, 1884 (called *F. tenella* Willd.) Specimen not found, is probably *F. rubra*

[*F. tenella* Willd.] *F. octoflora*

F. rubra L. Grassy shores, throughout Archipel Ouapitagon Romaine, top of strand C No 90,160 Brest rivière Blanc-Sablon, sand dunes by, C No 90,158

F. rubra, var *megastachys* Gaud Mingan, and strait of Belle Isle, region of calcareous rocks Mingan seignory Mingan, thicket on sand dunes, C No 90,163 Brest Blanc-Sablon limestone and calcareous sandstone terraces, M L Fernald and K M Wiegand, No 2,673 (H)

F. ovina L. Archipel du Vieux-Fort Bonne-Espérance, J A Allen No 12 (Hb Conn Agric Exp Sta, New Haven) Archipel du Blanc Sablon île Perroquets, J A Allen (Hb Conn Agric Exp Sta, New Haven) Recorded from St Paul by W A Stearns (S¹)

F. ovina, var *supina* (Schum) Hack Archipel de Kécapou île Kécapou, bare hilltop, C No 90,164

F. ovina, var *vinipara* L. Brest Longue pointe, mossy turf, C No 90,165

Bromus ciliatus L. Borders of woods, occasional throughout Mingan islands île du Havre, wet thicket, C No 90,166 St Augustin river sandy river bank, C. No 90,167 Brest Blanc-Sablon, limestone and calcareous sandstone terraces, M L Fernald and K M Wiegand, No 2,625 (H)

AGROPYRON REPENS (L.) Beauv Introduced at Lagorgendière Romaine, thicket near settlement, C No 90,172

A. caninum (L.) Beauv, var *Hornemanni* (Koch) Pease and Moore Grassy banks and shores, occasional throughout Mingan islands île Ste Geneviève, boggy thicket, C No 90,171 Charney pointe au Maunier, grassy shore, C No 90,170 St Augustin river sandy isle in river, C No 90,168. Brest rivière à la Truite, grassy hillside, C No 90,169, Blanc-Sablon, limestone and calcareous sandstone terraces, M L Fernald and K M Wiegand, No 2,689 (H)

Hordeum boreale Scribn and Smith Brest rivière Blanc-Sablon, brackish shore, M L Fernald and K M Wiegand, No 2,695(H)

H JUBATUM L. Sparingly introduced along western part of coast Pointe-aux-Esquimaux, Betchouane, and Natashkwan grassy shore, C No. 90,173.

Elymus arenarius L., var. *villosus* E Mey Very common all along the coast and extending inland along the river sands for short distances, in St Augustin river, 6 miles above tide-water

[*E. mollis* Trin] *E. arenarius*, var *villosus*

CYPERACEÆ (SEDGE FAMILY)

Eleocharis palustris (L.) R Br Shallow ponds and wet shores, throughout. Mingan seigniorv Watshishu, D N Saint-Cyr (Q) Charnay rivière Etamamiou, marshy brookside, C No. 90,177 Brest Blanc-Sablon, shallow pond margin, 2 feet of water, C No 90,176.

E. palustris, var *glaucescens* (Willd.) Gray Etamamiou to strait of Belle Isle, brackish shores Chainay Etamamiou river, sand shore of the estuary of, C No 90,181 Brouague Shekatika river, tidal mud at mouth of, C No 90,180 Chevalier St Paul, brackish shore, C No 90,179

E. acicularis (L.) R and S Reported from rivière au Tonnerre D. N Saint-Cyr, but specimen not seen Natashkwan pond shore, in dune hollow, C No 90,182

E. tenuis (Willd.) Schultes Lagorgendière Romaine, pond in tundra, C No 90,183

Scirpus cæspitosus L Turf on rocky crests, common throughout Mingan seigniorv Pointe-aux-Esquimaux, C W Townsend (H) Mingan islands Verill, Hyatt, and Shaler (Y) Lagorgendière Romaine, tundra, C No 90,185

S. hudsonianus (Michx.) Fernald Mingan islands and Labrador side of strait of Belle Isle, open bogs Mingan islands Verill, Hyatt, and Shaler (Y), D N Saint-Cyr (called *Eriophorum alpinum* L.) (Q), île Ste Geneviève, larch swamp, C No 90,186

S. rufus (Huds.) Schrader Reported from Mingan islands île à la Chasse, D N Saint-Cyr Specimen not seen (*Blysmus rufa* Panz.)

S. americanus Pers. Mingan seigniorv Watshishu, D N Saint-Cyr (called *S. pungens* Vahl) (Q)

[*S. pungens* Vahl] *S. americanus*

S. rubrotinctus Fernald Grassy brookside and meadows, occasional throughout Natashkwan river C W Townsend (H) Lagorgendière Romaine, grassy brookside, C No 90,187 Brest Jones point, grassy brookside, C No 90,188, Blanc-Sablon, and by streams, limestone and calcareous sandstone terraces M L Fernald and K M Wiegand, No 2,725 (H)

[*S. atrovirens* Muhl.] Recorded from Mingan, July 20, 1882, D N Saint-Cyr Specimen not seen, but is undoubtedly *S. atrocinctus* which grows at Mingan

S. atrocinctus Fernald Wet hollows or shores, occasional eastward as far as Gros-Mécatina Mingan seigniorv Mingan, sand bank, C. No 90,189 Natashkwan wet dune hollow, C No 90,190 Gros-Mécatina bog hole, C No 90,191

S. atrocinctus, var *brachypodus* Fernald Archipel du Vieux-Fort Bonne-Espérance, J A Allen (in Hb Conn Exp Sta, New Haven)

[*Blysmus rufa* Panz.] *Scirpus rufus*

[*Eriophorum alpinum* L.] *Scirpus hudsonianus*

Eriophorum Chamissonis C A Meyer Wet meadows and pond shores, throughout. Mingan islands île à la Chasse, D. N Saint-Cyr (called *E. polystachyon* L.) (Q) Mingan seigniorv Pointe-aux-Esquimaux, C. W. Townsend (H) Île Ouapitagone bog, C. No 90,194 Brest on the gneiss plain in bogs, M L Fernald and K. M Wiegand, No 2,731 (H)

[*E. russeolum* Fries] *E. Chamissonis*

[*E. polystachyon* L.] *E. Chamissonis*

E. callitric Cham. Ledges and drier parts of the tundra, very abundant throughout Mingan seigniory Pointe-aux-Ésquiaux, C. W. Townsend (H). Mingan islands. Grand île, D. N. Saint-Cyr (called *E. vaginatum* L.) (Q). Natashkwan river C. W. Townsend (H). Lagorgendière Romane, mossy ledge, C. No. 90,196. Archipel du Vieux-Fort Bonne-Espérance, J. A. Allen (H). Brest Blanc-Sablon, on the gneiss plain in bogs, M. L. Fernald and K. M. Wiegand, No. 2,734 (H).

[*E. vaginatum* L.] *E. callitric*

[*E. capitatum* Host.] *E. callitric*

E. gracile Roth. Listed by M. L. Fernald, *Rhodora*, xiii, 123 (1911), as growing in the bogs at Blanc-Sablon.

E. tenellum Nutt. Listed by M. L. Fernald, *Rhodora*, xiii, 123 (1911), as growing in the bogs at Blanc-Sablon.

E. angustifolium Roth. Archipel du Petit-Mécatina Harrington, bog on rocky crest, C. No. 90,197 (immature). Brest Blanc-Sablon, on the gneiss plain in boggy spots, M. L. Fernald and K. M. Wiegand, No. 2,745 (H).

E. angustifolium, var. *mapus* Schultz. In bogs or tundra, throughout Lagorgendière Romane, tundra, C. No. 90,199. Charnay pointe au Maunier, edge of bog in tundra, C. No. 90,198.

E. vaginatum L. Mingan seigniory Watshishu D. N. Saint-Cyr (Q), Mingan, pond shore, region of granite hills. C. No. 90,200. Natashkwan sphagnum bog, C. No. 90,201, Natashkwan river C. W. Townsend (H).

Rhynchospora alba (L.) Vahl. Rare, bogs in the Laurentian area, as far east as Natashkwan. Mingan Natashkwan river, C. W. Townsend (H). Natashkwan sphagnum bog C. No. 90,201.

Carex projecta Mackenzie. Thickets in valleys of larger rivers. Rivière Pentecôte D. N. Saint-Cyr (called *C. cristata* Schk., v. *mirabilis* Boott) (Q). Natashkwan river C. W. Townsend (H). St. Augustin river alder thicket on isle in river, C. No. 90,202.

C. pratensis Drejer. Phélypeaux baie du Milieu (Middle bay), J. A. Allen (H and Hb. Conn. Agric. Exp. Sta., New Haven).

[*C. cristata* Schk., var. *mirabilis* Boott] of D. N. Saint-Cyr is *C. projecta*.

C. Bebbii Olney. Mingan seigniory Betchouane, grassy shore, C. No. 90,203 (H).

C. œnea Fernald. Mingan seigniory Mingan river, D. N. Saint-Cyr (called *C. adusta* Boott) (Q).

[*C. adusta* Boott] of D. N. Saint-Cyr is *C. œnea*.

C. gynocrates Wormsk. Mingan islands and adjacent mainland, marl bogs. Mingan seigniory Pointe-aux-Ésquiaux, C. W. Townsend (H), and swampy brookside, C. No. 90,205. Mingan islands île Ste Geneviève, open bog, C. No. 90,204.

C. exilis Dewey. Lagorgendière Romane, edge of pond in tundra, C. Nos. 90,206 and 90,207.

C. echinata Murr. Reported from Mingan river, D. N. Saint-Cyr, July 16, 1882. Specimen not seen.

C. echinata, var. *angustata* (Carey) Bailey. Petite rivière Coxipi swampy brookside, C No. 90,208

[*C. sterilis* Willd.] Recorded from Mingan islands. St Charles island, July 22, 1882, D. N. Saint-Cyr. Specimen not seen, but is probably *C. echinata*.

C. scirpoides Schk. Brest Blanc-Sablon, boggy spots on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 2,781 (H), Blanc-Sablon, and mossy brookside, C. No. 90,209

[*C. canescens* L.] Recorded from St Paul by W. A. Stearns (S¹) probably is one of the following varieties

C. canescens, var. *sublobacea* Laestad. Natashkwan edge of slough in sand dunes, C No. 90,210

C. canescens, var. *disjuncta* Fernald Meadows, thickets, and borders of woods, very common throughout Lagorgendière Romaine, edge of woods, C. Nos 90,211 and 90,212 Archipel de St Augustin Bayfield island, grassy brookside, C. No. 90,213

[*C. canescens*, var. *vitilis* Gray] Recorded from Mingan islands St. Charles island, D. N. Saint-Cyr The cover so labelled contains a plant, var. *disjuncta*, which is said to have come from Watshishu

C. brunnescens Poir Bogs, meadows, and edge of woods, very common, throughout Ile Ouapitagone tundra, C No. 90,214 Brest Blanc-Sablon, on the gneiss plain, M. L. Fernald and K. M. Wiegand No. 2,793 (H)

C. tenuiflora Wahl Brest Blanc-Sablon, boggy margins of ponds on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 2,796 (H).

C. tenuiflora Wahl \times *C. trisperma* Dewey Brest Blanc-Sablon, in boggy shore, on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 2,797 (H)

C. trisperma Dewey Bogs and wet thickets, very common throughout. Mingan seigniory Watshishu, D. N. Saint-Cyr (Q) Brouague Shekatika river, mossy evergreen woods, C No. 90,218. Brest on the gneiss plain, in boggy spots. M. L. Fernald and K. M. Wiegand, No. 2,800 (H)

[*C. glareosa* Wahl] of D. N. Saint-Cyr is the var. *amphigena* Fernald

C. glareosa Wahl, var. *amphigena* Fernald. Rocks and marshy shores, general along the coast Mingan seigniory Watshishu, D. N. Saint-Cyr (called *C. glareosa* Wahl) (Q) Archipel Washicoutai île Triple, cleft in rocks, C No. 90,220 Archipel du Vieux-Fort Bonne-Espérance, J. Allen, No. 22 (H) Brest. Blanc-Sablon, on the gneiss plain, in wet spots, M. L. Fernald and K. M. Wiegand, No. 2,805 (H)

C. norvegica Willd Wet shores, generally distributed Charnav pointe au Maurier, edge of pond on island off, C No. 90,222 Phelypeaux baie du Miheu, J. A. Allen (H). Brest Blanc-Sablon, brackish shore, M. L. Fernald and K. M. Wiegand, No. 2,802 (H).

C. tenella Schk Mingan islands île Ste. Geneviève, boggy thicket, C. No. 90,223 Brest on the gneiss plain, in boggy spots, M. L. Fernald and K. M. Wiegand, No. 2,807 (H).

C. diandra Schrank Brest Blanc-Sablon, wet boggy shores of pools, on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 2,810 (H).

C. stipata Muhl. Mingan seigniory: Pointe-aux-Esquimaux, marshy brookside, C No. 90,224.

C. chondrorrhiza Lf. Brest: Blanc-Sablon, margins of bog-ponds, on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 2,815 (H).

C. maritima O. F. Müller. Wet or dry shores, common all along the coast Mingan seigniory. Quetachu, Manikuagan, D. N. Saint-Cyr (Q). Pontchartrain: Vieux-Fort, sea strand, C No 90,226.

C. salina Wahl, var. *lanceata* (Dewey) Kukenthal. Charnay: pointe au Maurier, sandy border of tidal pool, C. No. 90,228. Boishébert: baie des Moutons, salt marsh, C. No. 90,229.

C. salina, var. *kattagatensis* (Fries) Almq. Wet shores, fresh or brackish, common throughout. Mingan seigniory: Watshishu, D. N. Saint-Cyr (Q). Archipel de Kécarpoui île du Petit Rigolet, salt marsh, C. No. 90,231. Brest: Blanc-Sablon, on the gneiss plain in wet places, M. L. Fernald and K. M. Wiegand, Nos. 2,818, 2,819, and 2,822.

C. subspathacea Wormskj Salt marshes, general along the coast. Archipel Ouapitagne Romaine, salt marsh, C No 90,234. This is the first record for this species in America south of Greenland, and Hudson bay.

C. aquatilis, Wahlenb. Fresh or brackish shores, general. Charnay: pointe au Maurier, edge of pool in tundra, C No 90,235. Archipel du Vieux-Fort. Bonne-Espérance, J. A. Allen, No. 8 (H). Brest: Blanc-Sablon, on the gneiss plain in wet places, M. L. Fernald and K. M. Wiegand, No. 2,829 (H).

C. aquatilis, var. *cuspidata* Laestad. Mingan river D. N. Saint-Cyr (called *C. vulgaris* Fries) (Q) Archipel du Vieux-Fort; Bonne-Espérance, J. A. Allen (called *C. aperta*, var. β Boott), (Hb. Conn. Agric. Exp. Sta., New Haven).

[*C. vulgaris* Fries] *C. aquatilis*, var. *cuspidata*

C. rigida Good Archipel du Petit-Mécatina Harrington, bog on rocky crest, C. No 90,239. Archipel du Vieux-Fort île Herbée, grassy summit, C. No. 90,238.

C. lenticularis Michx. Damp open spots, general Natashkwan: wet dune hollow, C. No 90,240. Eskimo river J. A. Allen, No. 17 (H). Brest: Blanc-Sablon, abundant on boggy or sandy margins of pools, on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 2,835 (H). Southern Labrador. Storer (H).

[*C. Goodenowii* J. Gay.] Plant so labelled from Natashkwan river C. W. Townsend (H). It is a young spray, tall and apparently leafy. It might equally well be *C. lenticularis*.

C. aurea Nutt. Mingan islands. île Ste. Geneviève, muddy shore, D. N. Saint-Cyr (Q).

[*C. aurea*, var. *androgyna* Olney] of D. N. Saint-Cyr is *C. aurea*.

C. pauciflora Lightf. Bogs and tundra, general Mingan seigniory Watshishu, D. N. Saint-Cyr (Q). Lagorgendière Romaine, tundra, C. No. 90,241. Brest: Blanc-Sablon, on the gneiss plain in bogs, M. L. Fernald and K. M. Wiegand, No. 2,848 (H).

C. leptalea Wahlenb. Mingan islands and strait of Belle Isle, wet thickets or meadows. Mingan islands île Ste Geneviève, boggy thicket, C. No. 90,242; île à la Chasse, pond shore, C. No. 90,243. Brest Blanc-Sablon, on the gneiss plain in wet moss, M. L. Fernald and K. M. Wiegand, No. 2,850 (H), Blanc-Sablon, and grassy brookside, C. No. 90,244.

C. Halleri Gunn Brest Blanc-Sablon, by streams, limestone and calcareous sandstone terraces, M. L. Fernald and K. M. Wiegand, No. 2,852 (H)

C. atrata L., var *ovata* (Rudge) Boott Region of Mingan islands, and the strait of Belle Isle, meadows Mingan seigniory Betchouane, meadow, C. No. 90,245 Brest Blanc-Sablon, limestone and calcareous sandstone terraces, M. L. Fernald and K. M. Wiegand, Nos. 2,854 and 2,855 (H)

C. stylosa C. A. Meyer. Boggy spots, general, Île Petit-Mécatina cold, shaded cleft in rocks, C. No. 90,247 Brest Brador and Blanc-Sablon, forming depressed mats on sand, M. L. Fernald and K. M. Wiegand, Nos. 2,941 and 2,942 (H)

C. scirpodea Michx Brest anse des Dunes, sandy pond shore, C. No. 90,248

C. umbellata Schk., var *brevirostris* Boott Natashkwan sand dunes, C. No. 90,249

C. deflexa Hornem Occasional as far east as Shekatika, dry thickets and edges of dry woods Mingan islands Eskimo island, D. N. Saint-Cyr (called *C. novæ-angliæ* Schw.) (Q) Île Petit-Mécatina rocky summit, C. No. 90,250 Brouague near Indian camp on dry hillside, C. No. 90,252

[*C. novæ-angliæ* Schw.] *C. deflexa*

C. lunda (Wahl.) Willd Bogs and tundra, apparently throughout Lagorgendière Romane, edge of pond in tundra, C. No. 90,253

C. vaginata Tausch Mingan islands, and strait of Belle Isle, wet thickets Mingan islands île du Havre, Mingan, D. N. Saint-Cyr (Q), Eskimo island, swampy woods, C. No. 90,254, île Ste Geneviève, boggy thicket, C. No. 90,255 Brest Blanc-Sablon, in boggy spots on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 2,871 (H)

C. paupercula Michx Bogs and tundra, common throughout Seven Islands C. B. Robinson, No. 927 (H) Rivière au Tonnerre D. N. Saint-Cyr (Q) Lagorgendière Romane, tundra, C. No. 90,259. Boishébert baie des Moutons, sphagnum bog, C. No. 90,258

[*C. virgata* Smith] Reported by D. N. Saint-Cyr Specimen not seen, is probably *C. paupercula* Michx

C. limosa L. Bogs and tundra, common throughout Charnay, pointe au Maurier, wet tundra, C. No. 90,260 Brest Blanc-Sablon, on the gneiss plain, in boggy spots, M. L. Fernald and K. M. Wiegand, No. 2,878 (H)

C. rariflora Sm Bogs and tundra, extremely abundant throughout southern Labrador Storer (H) Mingan seigniory Watshishu, D. N. Saint-Cyr (Q) Lagorgendière Romane, tundra, C. No. 90,263 Archipel du Vieux-Fort Bonne-Espérance, J. A. Allen, No. 18 (H) Brest Blanc-Sablon, on the gneiss plain, in boggy or sandy soil, M. L. Fernald and K. M. Wiegand, No. 2,885 (H)

C. eburnea Boott Region of Mingan islands Mingan river
sable, D. N. Saint-Cyr (Q) Mingan islands Eskimo island, damp lime-
stone cliffs, C No 90,264, and île Ste Geneviève

C. concinna R. Br. Region of Mingan islands Mingan seignory:
Pointe-aux-Esquimaux, C W Townsend (H). Mingan islands île à
l'Ancre, D. N. Saint-Cyr (Q), île Ste Geneviève, limestone rocky banks,
C No 90,265

C. flava L. Mingan islands île Ste Geneviève, boggy thicket, C.
No. 90,266 Collection of D. N. Saint-Cyr is the var. *elator*

C. flava, var *elator* Schlecht Rivière Pentecôte D N Saint-Cyr,
may come from within the area, although the mouth of the river is beyond
the boundary line (Q) Mingan islands île à la Chasse, boggy pond shore,
C No 90,267

C. Æderi Retz, var *pumila* (Coss and Germ) Fernald Mingan
seignory Betchouane, boggy shore, C No 90,268

C. capillaris L. Mingan islands and strait of Belle Isle, and one sta-
tion between, on an exposed outer island, abundant at, turfy headlands
and limestone cliffs Mingan islands Eskimo island, D N Saint-Cyr
(Q), St Charles island, D N Saint Cyr (mixed with *Catabrosa aquatica*) (Q)
Mingan seignory Pointe-aux-Esquimaux, rocky limestone headland, C.
No 90,270 Archipel Ouapitagon Romame, forming turf on island,
C No 90,269 Brest pointe à Peau, dry turf, C No 90,271

C. capillaris, var. *elongata* Olney Brest Blanc-Sablon, limestone and
calcareous sandstone terraces, by brooks, M L Fernald and K M.
Wiegand, No 2,919 (H)

C. oligosperma Michx Bogs and pond shores, occasional, as far east
as Shekatika Rivière au Tonnerre D N Saint-Cyr (Q) Mingan
seignory Mingan, tundra, C. No 90,275, Pointe-aux-Esquimaux, edge of
pond in tundra, C No 90,272 Legardeur Coacocho, marshy brook-
side, C No. 90,274 Briouague Petite rivière Coxipi, sphagnum bog, C
No 90,273

C. saxatilis L., var *rhomalea* Fernald Abundant at the strait of
Belle Isle Brest Blanc-Sablon, sandy pond shores, M L Fernald and
K M Wiegand, Nos 2,954 and 2,956, and 2,957 (H), and C Nos 90,276
and 90,277

C. saxatilis, var *rhomalea* × *C. vesicaria* L. Rivière Pentecôte D N
Saint-Cyr (called *C. militaris*) (Q) Natashkwan border of slough in
sand dunes, C No 90,278 Brest sandy pond shore, on the gneiss plain
M L Fernald and K M Wiegand, No 2,963 (H)

C. vesicaria L. Chevalier St Paul, tussocks in swale, C No 90,279.

C. vesicaria L., var *distenta* Fries Natashkwan wet dune hollow,
C No 90,280

C. (hybrid?) A plant with empty perigynia, a probable hybrid,
differing from the *C. vesicaria* group in not having several staminate
spikes Lagorgendière Romame, tussock on grassy shore, C. No. 90,225

C. rostrata Stokes, var *utriculata* (Scott) Bailey. Mingan islands
île du Havre, grassy brookside, C. No 90,281.

ARACEÆ (ARUM FAMILY)

Calla palustris L. Natashkwan. slough in sand dunes, C. No 90,282

LEMNACEÆ (DUCKWEED FAMILY)

Lemna minor L. Small ponds on two outer, rocky islands near Romaine. Archipel Washicoutai: île Triple, filling tiny pool in rocks, C. No. 90,283 Archipel Ouapitagonne l'île au God, filling small pools, C. No. 90,284. This plant is known at Bic on Gaspé peninsula, and on Magdalen islands. F Hegelmaier, Syst Übersicht der Lemnaceæ, Engler. Bot Jahrb, xxi, 292 (1895) records this from "Hudsonbai-Länder (R. Brown) "

ERIOCAULACEÆ (PIPEWORT FAMILY)

Eriocaulon septangulare With. Shallow pools, occasional, as far east as Shekatika. Mingan seigniory: Mingan, pool in tundra, C No. 90,286. Brouague Petite rivière Coxipi, in one foot of water, sandy-bottomed pool, C No 90,285

JUNCACEÆ (RUSH FAMILY)

JUNCUS BUFONIUS L. Sparingly introduced, not spreading from the settlements Reported from rivière au Tonnerre, D. N. Saint-Cyr Specimen not seen. Pointe-aux-Esquimaux. Lagorgendière Romaine, wet sand, C. No. 90,288. Chevalier. St. Paul, path, C No 90,287. Archipel du Vieux-Fort Bonne-Espérance, J A Allen

J. trifidus L. Rocky crests in the Laurentian area, general. Île Ouapitagonne rocky crest, C No 90,289 Archipel de St Augustin. Bayfield island, C. No. 90,290

J. vaseyi Engelm. Natashkwan sand dunes, C. No 90,291, and Shekatika Also found in Keewatin, see H H. Bartlett, Rhodora, xi, 155 (1909)

[*J. effusus* L.] Recorded from rivière Pentecôte, Ragged island, and Mingan islands, by D. N. Saint-Cyr The cover containing the sheets is labelled, Levis and rivière Pentecôte. Within are five sheets, some of *J. effusus* and some not One has a loose ticket, Levis, and the others no data. This material has too little authentic data capable of interpretation to serve as the only record of the plant from the coast.

J. filiformis L. Grassy shores, occasional throughout. Pontchartrain. Vieux-Fort, wet grassy shore, C. No. 90,293 Brest. Jones point, sandy border of pond, C No 90,292

[*J. balticus* Willd.] of D N Saint-Cyr is the var. *littoralis*.

J. balticus Willd., var. *littoralis* Engelm. Mingan islands, on brackish shores, and marshes: D. N. Saint-Cyr (called *J. balticus*) (Q). Charnay pointe au Maurier, brackish marsh, C. Nos. 90,294 and 90,295. Brest Blanc-Sablon, sandy brackish shore, M. L. Fernald and K. M. Wiegand, No 2,991 (H).

J. balticus Willd., var. *melanogenus* Fernald and Wiegand. Brest Brador, sand dunes, M L Fernald and K. M. Wiegand, No 2,992 (type in H).

J. brevicaudatus (Engelm.) Fernald Wet places, occasional Mingan seigniory Pointe-aux-Esquimaux, marshy brookside, C No. 90,296. Charnay pointe au Maurier, muddy brookside, and tundra, C. Nos. 90,298 and 90,297. Ile Gros-Mécatina wet mud, C No 90,299 Brest: Blanc-Sablon, local in wet places, on the gneiss plain, M L Fernald and K. M. Wiegand, No 3,003 (H)

J. pelocarpus Meyer. Pointe-aux-Esquimaux, and Natashkwan: marshy pond shore, C No 90,300

J. subtilis Meyer Mingan seigniory Mingan river, sand bar in, C. No. 90,301

J. alpinus Vill., var. *insignis* Fries Mingan seigniory Mingan river, sand flat in, C No 90,302

J. triglumis L. Brest Longue pointe, mossy turf, C No 90,303

Luzula parviflora Desv Grassy borders of woods, occasional throughout Brouague Petite rivière Coxipi, sunny open bank, C No 90,304. Reported "on hills," by S R Butler (B²)

L. parviflora, var. *melanocarpa* (Michx.) Buchenau Boggy woods, common on Mingan islands and strait of Belle Isle, occasional elsewhere. Rivière au Tonnerre D N Saint-Cyr (called *E. spadiacea* DC, var. *parviflora* Desv) (Q). Mingan islands île du Havre, swampy woods, C No. 90,306, Eskimo island, boggy woods, C No 90,305 Brest Blanc-Sablon, limestone and calcareous sandstone tablelands, M L Fernald and K M. Wiegand, No 3,049 (H)

[*L. spadiacea* DC, var. *parviflora* Desv] *L. parviflora*

L. confusa Lindeb Brest rivière à la Truite, turf crest of granite hills, C No 90,307

L. spicata (L.) DC Brest rivière à la Truite, grassy hollow between granite cliffs, C No 90,308, Blanc-Sablon, abundant in sand blows, on the gneiss plain, M L Fernald and K M Wiegand, No 3,051 (H)

L. campestris (L.) DC, var. *multiflora* (Ehrh.) Celak Pontchartrain Vieux-Fort, grassy shore, C No. 90,309

L. campestris, var. *frigida* Buchenau. Archipel du Blanc-Sablon: Greenly island, J A Allen (in Hb Conn Exp Sta, New Haven). Brest Jones point, hillside turf, C No 90,310, Blanc-Sablon, limestone and calcareous sandstone terraces, M. L Fernald and K M Wiegand, No. 3,057 (H)

LILIACEÆ (LILY FAMILY)

Toxifieldia minima (Hill) Druce Limestone cliffs and mossy banks, common in the region of Mingan islands Mingan islands D. N. Saint-Cyr (Q), Eskimo island, wet limestone sea-cliff, C No 90,311

T. glutinosa (Michx.) Pers. Mingan islands July, 1882, D N Saint-Cyr (Q). It is known also on Anticosti

Zigadenus chloranthus Richardson Limestone shingle beaches and sea-cliffs, common in region of the Mingan islands Mingan islands Eskimo island, top of limestone shingle, C No 90,312, île Ste. Geneviève, top of limestone strand, C No 90,313

ALLIUM SCHOENOPRASUM L. Brest Blanc-Sablon, escaped from cultivation, sandy sea strand, M L Fernald and K M Wiegand, No 3,070 (H)

Clintonia borealis (Art.) Raf Mossy woods, very abundant throughout Seven Islands C B Robinson, No 681 (H) Mingan seigniory. Mingan, C W Townsend (H) Lagorgendière Romaine, mossy woods, C. No 90,314 Brest Blanc-Sablon, limestone and calcareous sandstone terraces, M L Fernald and K M Wiegand, No 3,072 (H)

Smilacina stellata (L.) Desv Sandy or turf places, common throughout. Seven Islands C B Robinson, No 679 (called *Vagnera stellata*) (H) Mingan seigniory Mingan, C W Townsend (H) St Vincent-rivière Netagamiou, sand dunes at mouth of, C No 90,315 Brest Blanc-Sablon, sandy strand, M L Fernald and K M Wiegand, No 3,075 (H)

S. trifolia (L.) Desv Bogs, tundra, and wet woods, extremely common throughout Seven Islands C B Robinson, No 891 (H) Natashkwan river. C W Townsend (H) Lagorgendière Romaine, tundra, C No. 90,316

[*S. bifolia* Ker.] *Maianthemum canadense*

Maianthemum canadense Desf Turfy or mossy banks, borders of woods, common throughout Mingan seigniory Mingan, C W Townsend (H) Ile Petit Mécatina mossy bank, C No 90,317

Streptopus amplexifolius (L.) DC Mossy woods, common throughout Southern Labrador, Storer (H) Mingan islands D N Saint-Cyr (Q) Archipel du Petit-Mécatina Harrington, cold ravine, C No 90,319. Brest Blanc-Sablon, limestone and calcareous sandstone tablelands, M L Fernald and K M Wiegand, No 3,079 (H)

S. roseus Michx Mossy woods general, but not abundant Seven Islands C B Robinson No 753 (H) Mingan seigniory Mingan, C W. Townsend (H) Lagorgendière Romaine, wooded river bank, C No 90,322 Brest Blanc-Sablon, limestone and calcareous sandstone terraces, M L Fernald and K M Wiegand, No 3,080 (H)

IRIDACEÆ (IRIS FAMILY)

Iris versicolor L. Grassy borders of streams and ponds, general. Seven Islands C B Robinson, No 872 (H) Brest Jones point grassy brookside, C No 90,324, Blanc-Sablon, abundant in wet spots on the gneiss plain, M L Fernald and K M Wiegand, No 3,085 (H)

I. setosa Pall., var *canadensis* Foster Rocky, gravelly, or turf shores near the sea, very abundant Collected by C B Robinson, Dr. Bryant, Storer, D N Saint-Cyr, and Fernald and Wiegand

[*I. tridentata* Pursh] of D N Saint-Cyr is *I. setosa* var *canadensis*

Sisyrinchium angustifolium Mill Occasional as far east as Natashkwan. St Charles island, Betchouane and Natashkwan sand dunes, C. No. 90,327.

ORCHIDACEÆ (ORCHIS FAMILY)

Cypripedium parviflorum Salisb Abundant in the calcareous region of Mingan islands D N Saint-Cyr (called *C. pubescens* Willd.), Verrill,

Hyatt, and Shaler (Y), Eskimo island, limestone sea-cliffs, C. No. 90,330; reported from Grande île, J Richardson (R¹), île Ste Geneviève, top of limestone shingle, C. No. 90,328. Mingan seigniorv Betchouane, edge of woods, C No 90,329

[*C pubescens* Willd.] of D. N. Saint-Cyr is *C parviflorum*

C acaule Ait. Dry woods, occasional, as far east as Shekatika. Mingan seigniorv Watshishu, D. N Saint-Cyr (Q) Brouague Petite rivière Coxipi, dry mossy hillside, C. No 90,331 In Dr Wm. Kelly's manuscript list (called *C humile*)

Orchis rotundifolia Pursh Mingan islands limestone cliffs, Verrill, Hyatt, and Shaler (called *Platanthera rotundifolia* Lindl) (Y), D. N Saint-Cyr (called *Habenaria rotundifolia* Richards) (Q), Eskimo island, calcareous talus, C. Nos 90,332 and 90,333

[*Platanthera rotundifolia* Pursh] of A. E. Verrill is *Orchis rotundifolia*.

[*Habenaria rotundifolia* Richards] of D. N Saint-Cyr is *Orchis rotundifolia*

Habenaria hyperborea (L.) R Br Pointe-aux-Esquimaux Mingan islands île du Havre, D. N Saint-Cyr (Q) Reported by S R Butler (B⁵) "in swamps and on hillsides" In Dr Wm Kelly's manuscript list (called *Orchis hyp*)

H dilatata (Pursh) Gray Common in region of Mingan islands, and the strait of Belle Isle, bogs and swampy woods, infrequent elsewhere, île du Havre, Betchouane île à la Chasse, Ste Geneviève, Natashkwan. Reported by S R Butler (B⁵) "in swamps and on hillsides" Brest Blanc-Sablon, grassy brookside, C No 90,334

H obtusata (Pursh) Richards Mossy woods, very common throughout Also collected by C W Townsend, C B Robinson, D N Saint-Cyr, and Fernald and Wiegand Reported by S R Butler (B⁵).

[*H psycodes* (L.) Sw] Recorded from Mingan islands île du Havre, August 15, 1882 The cover containing the plant is labelled île d'Orleans, July, 1883 A loose ticket under the plant says "prés humides, île du Havre, July 31, 1882, No 627c" The plant is common in Gaspé and western Newfoundland, and in spite of the confused data, this record seems credible

[*Spiranthes gracilis* Bigel] Recorded from Little Mingan river, August 24, 1882, D N Saint-Cyr Specimen not seen.

Spiranthes Romanzoffiana Cham Moist places, region of Mingan islands and the strait of Belle Isle, and two other stations Seven Islands: C. B Robinson (C) Mingan île du Havre; île à la Chasse île Ste. Geneviève, Natashkwan, and Brest anse des Dunes, grassy hollow, C. No. 90,336

Epipactis repens (L.) Crantz, var *ophioides* (Fernald) A. A. Eaton. Deep woods, occasional. Seven Islands C B Robinson (C). Mingan seigniorv Mingan, mossy woods, C. No 90,338. St. Augustin river: mossy, evergreen woods, C. No 90,337.

[*Peramium ophioides* (Fernald) Rydb] *Epipactis repens*, var *ophioides*.

Listera cordata (L.) R. Br. Mossy woods, occasional, throughout. Goynish: îles Boisées de cap Blanc, Washtawouka, mossy, evergreen woods, C. No. 90,340. Brouague Shekatika river, mossy, evergreen woods, C No 90,339.

L. convallarioides (Sw.) Torr Mingan islands fle Quin, D N Saint-Cyr (Q).

Corallorhiza trifida Chatelam Region of Mingan islands, rich woods. Mingan, Betchouane, and Mingan islands Eskimo island, mossy woods, C No 90,341. fle Ste Geneviève, edge of woods, C. No 90,342

Microstylis monophyllos (L.) Lindl Reported from Archipel du Vieux-Fort, Bonne-Espérance, damp ground, concealed by short grass. W. A Stearns (S¹) Fernald and Wiegand found this on the Labrador side of the strait of Belle Isle.

Calypso bulbosa (L.) Oakes Mingan islands calcareous slopes, Ver-rill, Hyatt, and Shaler (Y). D N Saint-Cyr (Q), Eskimo island, mossy woods at base of limestone cliff, C Nos 90,343 and 90,344, and C W. Townsend (H), fle à la Chasse, C W Townsend (H)

[*C borealis* Sal] is *C bulbosa*

SALICACEÆ (WILLOW FAMILY)

[*Salix nigra* Marsh] Reported "general in southern part" S. R Butler (B^s) Improbable

Salix lucida Muhl Mingan and St Augustin river sandy bank in river, C No 90,349 Brest rivière Blanc-Sablon, along, M L Fernald and K M Wiegand, No 3,146 (H).

S lucida, var *intonsa* Fernald. Natashkwan river C W. Townsend (H) Lagorgendière Romane, river bank, C No. 90,350

S discolor Muhl Wet thickets and borders of woods, common on Mingan islands top of calcareous shingle, and swampy woods, trees 30 feet in height, 6 inches in diameter, C Nos 90,346, 90,347, and 90,348, fle Ste Geneviève, wooded bank, C No 90,345

[*S. rostrata* Richards] At Mingan, C W Townsend collected young staminate material which may well be this. The catkin is like those of *S. rostrata* but the leaves look as if they might become glabrate

S argyrocarpa Anderss Ledges and rocky hilltops in the Laurentian area, Shekatika east to the strait of Belle Isle Brouague Shekatika river, bank of, C No 90,352 St Augustin river sandy isle in river, C No. 90,351 Brest Blanc-Sablon, wet hollows on the gneiss plain, M L Fernald and K M Wiegand, No 4,240 (H), rivière Blanc-Sablon, edge of, C. No 90,353

S humilis Marsh Thickets, apparently throughout Seven Islands D. N. Saint-Cyr (Q) Natashkwan river C W Townsend (H) Boishébert baie des Moutons, wooded hillside, C No 90,354

S humilis × *S phyllcifolia* L Boishébert baie des Moutons, wooded hillside, common, C No 90,356

S. phyllcifolia L Forming thickets on brooksides and river banks, throughout Southern Labrador Storer (H) Natashkwan river C W Townsend (H) C Nos 90,357-90,368

S. adenophylla Hook. Natashkwan river C W Townsend, July 24 to August 10, 1912 (H). This corresponds exactly to Hooker's description, to the description and plate of Andersson, Monographia Salicium, 164 and Pl. viii, F. 95 (1863) which were drawn from the type specimen, and to a tracing of the type made by Mr S F Blake for the Gray herbarium. This is the second record for the plant, the first being the type, Labrador. Dr Morrison. This plant is quite distinct from *S. synticola* Fernald of the Great Lakes region which has been confused with it.

S. cordata Muhl. St. Augustin river muddy river bank, C No. 90,369. This is the sterile plant with broadly lanceolate leaves, and white canescent twigs that is common in the northern part of the range of the species.

S. pyrifolia Anderss. Natashkwan edge of slough in sand dunes, C No. 90,370.

S. candida Flugge. Brookside and meadows, common in the calcareous region of Mingan islands and strait of Belle Isle. Mingan seigniory. Pointe-aux-Esquimaux, C W Townsend (H). Mingan islands in part, D N. Saint-Cyr (Q), île à la Chasse, pond shore, C No 90,372. Brest Jones point, grassy brookside, C No 90,374, and Blanc-Sablon, common by brooks, limestone and calcareous sandstone table lands, M L Fernald and K. M. Wiegand, No 3,180 (H).

S. pellita Anderss. St. Augustin river sandy isle in river, C No 90,373. Brest Jones point, grassy brookside, C No 90,374, rivière Blanc-Sablon, large shrubs along, M L Fernald and K M Wiegand, No 3,182 (H).

S. cordifolia Pursh. Common at Mingan islands and less frequent eastward.

S. cordifolia f. *hypoprionota* Schneider. Mingan islands île Ste Geneviève, limestone rocky bank, C. No 90,840.

S. anglicum Cham. Archipel du Vieux-Fort. Bonne-Espérance, wet place, J A Allen (Hb. Field Museum).

[*S. alpestris* Anderss.] Recorded from Tabatière, 1858, J. B. A. Berland (B¹). Probably is *S. cordifolia*.

S. Uva-ursi Pursh. Exposed ledges in the Laurentian area. Baie des Moutons. Brest rivière à la Truite, rocky ledges and turfy summit, C Nos 90,375 and 90,376; Blanc-Sablon, on the gneiss plain, M. L. Fernald and K M Wiegand, No 3,169 (H).

S. vestita Pursh. Calcareous region of Mingan islands and the strait of Belle Isle. Mingan islands. Eskimo island, limestone sea-cliffs, C. No. 90,377, Verrill, Hyatt, and Shaler (called *S. reticulata* L., var. *vestita* Anderss.) (Y). Mingan seigniory. Pointe-aux-Esquimaux, C W Townsend (H).

S. vestita, var. *psilophylla* Fernald and St. John. Mingan islands: Eskimo island, limestone sea-cliffs, C No. 90,378.

[*S. reticulata* L., var. *vestita* Anderss.] *S. vestita*.

Populus tremuloides Michx. Reported from Seven Islands, C B Robinson. (R²). Mingan seigniory. Mingan, C W Townsend (H), 3 miles up Mingan river, C No. 90,379. R. Bell indicates this on his map (B⁴) as growing over the greater part of Labrador peninsula. It does not, however, grow in the coastal region east of Mingan.

[*P. grandidentata* Michx.] R. Bell indicates on his map (B⁴) that this grows in the southern part of the peninsula. There seems to be no evidence of its being in the coastal region.

P. balsamifera L. Drier woods on calcareous region of Mingan islands Eskimo island, edge of mossy woods, C No. 90,380 Mingan seigniory Mingan, C. W. Townsend (H). Also at île du Havre, Pointe-aux-Esquimaux, and Betchouane. R. Bell shows (B⁴) this is of general distribution in the southern part, but this does not seem to be the case.

MYRICACEÆ (SWEET GALE FAMILY)

Myrica Gale L. Bogs, tundra, and thickets, extremely abundant throughout. Also collected by C. W. Townsend, C. B. Robinson, and reported by Miss Macfarlane (B⁶).

BETULACEÆ (BIRCH FAMILY)

[*Betula populifolia* Ait.] Reported by W. A. Stearns (S¹) "Very abundant, everywhere in the woods and on side hills. An abortive tree seldom over 20 feet high here." This is obviously a misidentification. The tree is probably *B. alba* or some variety of it.

Betula alba L. Mingan seigniory Betchouane, hillside, C No. 90,824 Mingan islands Eskimo island, C. W. Townsend (H).

B. alba, f. *occidentalis* (Hook.) Fernald. Very common throughout, forming large forests in the river valleys. Île Petit Mécatina tree 30 feet high, 1 foot in diameter, in a sheltered cove by a lake, C No. 90,825. Although transitions occur in some places, especially the sheltered river valleys, most of the trees examined had the dark brown bark that is given as the character of f. *occidentalis*.

B. alba, var. *cordifolia* (Regel) Fernald. Common throughout Boishébert baie des Moutons, wooded hillside, C No. 90,829. In this variety also occur two phases, one with chalky white bark and the other with dark silvery brown bark, such as archipel de St. Augustin île des Génévriers, sheltered valley, tree 1 foot in diameter, 20 feet high, C No. 90,827.

B. alba, var. *carpatica* (W. and K.) Fernald. Thickets, as far east as Piashti bay Mingan islands île Ste. Geneviève, limestone sea-cliffs, C No. 90,830.

[*B. papyracea* Ait.] Probably is *B. alba*, var. *cordifolia* or f. *occidentalis*.

B. microphylla Bunge. Rocky places in the Laurentian area. Seven Islands C. B. Robinson, No. 867 (called *B. glandulosa* Michx.). Mingan seigniory. Mingan, granite hills, C No. 90,384 Charnay pointe au Maurier, 4 feet high, on rocky crest, C No. 90,385.

[*B. nana* L.] reported by S. R. Butler (B⁶), is undoubtedly *B. Michauxii*.

B. Michauxii Spach. Tundra and pond margins, abundant and generally distributed. Natashkwan river arctic plain, C. W. Townsend (H). Lagorgendière: Romaine, tundra, C No. 90,386. Brest Blanc-Sablon, margins of bog ponds, on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 3,269 (H).

B. pumila L. Edge of bogs, thickets and turfy hills, abundant, and general. Also collected by J. A. Allen, C. W. Townsend, and D. N. Saint-Cyr. Reported (B⁵) as collected by Miss Macfarlane.

B. glandulosa Michx. Thickets and hillsides, especially in the Laurentian area, general. Seven Islands C. B. Robinson (H). Mingan islands D. N. Saint-Cyr (Q). Archipel du Vieux-Fort île Herbée, tundra, C. No. 90,832.

B. glandulosa, var. *sibirica* (Ledeb.) Blake. Occasional throughout. Mingan seigniory Mingan, C. W. Townsend (H). Chevalier St. Paul, edge of thicket, C. No. 90,391. Brest Blanc-Sablon, on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 3,267 (H).

Alnus crispa (Ait.) Pursh. Damp shores, occasional. Seven Islands: C. B. Robinson, No. 684 (C and H). Archipel de Kécarpouî île du Petit Rigolet, rocky shore, C. No. 90,392.

A. crispa, var. *mollis* Fernald. Shores and banks of water courses, extremely abundant, throughout. Archipel du Petit-Mécatina Harrington, cold ravine, C. No. 90,394.

[*A. viridis* DC.] of D. N. Saint-Cyr is probably *A. crispa*, var. *mollis*.

[*A. viridis* DC.] recorded by W. A. Stearns (S¹), is probably *A. crispa*, var. *mollis*.

[*A. incana* Willd.] of R. Bell (B⁴) and D. N. Saint-Cyr is probably the var. *glauca*.

A. incana (L.) Moench, var. *glauca* Ait. Brooksides and wet shores, common throughout. Seven Islands C. B. Robinson, No. 900 (H). Mingan seigniory brookside, Piashti bay, C. No. 90,395.

[*A. serrulata* Ait.] reported by W. A. Stearns (S¹) It is probably *A. incana*, var. *glauca*.

URTICACEÆ (NETTLE FAMILY)

Urtica gracilis Ait. Seven Islands C. B. Robinson, No. 946 (C and H).

U. Lyallii Wats. Rocky or grassy shores, general. Mingan islands île du Havre (called *U. gracilis*) (Q). Mingan seigniory Pointe-aux-Esquimaux, C. B. Robinson, No. 625 (called *U. gracilis*) (H), Piashti bay, rocky shore, C. No. 90,396.

SANTALACEÆ (SANDALWOOD FAMILY)

[*Comandra umbellata* Nutt.] All records of this belong with *C. Richardsiana*.

Comandra Richardsiana Fernald. Mingan islands Verrill, Hyatt, and Shaler (called *C. umbellata*) (Y), D. N. Saint-Cyr (called *C. umbellata*) (Q).

C. livida Richardson. Turfy banks and borders of woods, common throughout. Seven Islands C. B. Robinson (H). Mingan seigniory. Pointe-aux-Esquimaux, C. W. Townsend (H). Mingan islands: Verrill, Hyatt, and Shaler (Y). Île Petit Mécatina. mossy bank, C. No. 90,397.

POLYGONACEÆ (BUCKWHEAT FAMILY)

[*Oxyria digyna* (L.) Hill] Erroneously recorded by J Macoun (M) as collected on Caribou island by S R Butler Neither Butler (B⁵) nor W. A Stearns lists the species.

Rumex occidentalis Wats. Never far from sea, common all along the coast. Also collected by J A. Allen, Storer, D. N. Saint-Cyr, Verrill, Hyatt, and Shaler

[*R. domesticus* DC] recorded by Verrill (V¹) is *R. occidentalis*.

R. Britannica L. Fresh marshes, eastward as far as Etamamiou. Ile du Havre, île Ste Geneviève, Coacoachou, and Charnay, rivière Etamamiou, swale, C. No 90,399

R. mexicanus Meisn Sea strands, eastward as far as Romane Mingan islands D N Saint-Cyr (called *R. salicifolius* Weim.) (Q), île du Havre, île Ste Geneviève Coacoachou, and Lagorgendière Romane, sandy shore, C No 90,400

[*R. salicifolius* Weim] of D N Saint-Cyr is *R. mexicanus*

R. ACETOSELLA L. Introduced at a number of places Mingan seigniory Sheldrake river, D N Saint-Cyr (Q), Pointe-aux-Esquimaux, C. B Robinson, No 651 (H) St Vincent rivière Netagamiou, sandy bank at mouth of, near camp, C No 90,401

Polygonum Fowleri Robinson Rocky shores, occasional from point au Maurier eastward to the strait of Belle Isle Charnay pointe au Maurier, rocky shore, C No 90,823 Iles Netagamiou, Harrington, and Boishebért baie des Moutons, rocky shore, C No. 90,822

P. boreale (Lange) Small Known only from Charnay pointe au Maurier, dooryard, C No 90,820

P. AVICULARE L. Introduced at numerous places Chevalier. St. Paul, dooryard, C No 90,821

P. viviparum L. Limestone cliffs and mossy headlands, from Mingan islands to the strait of Belle Isle Mingan islands D N. Saint-Cyr (Q), Verrill, Hyatt, and Shaler (Y) Archipel du Vieux-Fort île Herbée, rocky crest, C No 90,404 Brest Blanc-Sablon, abundant on cool slopes, limestone and calcareous sandstone terraces, M L Fernald and K. M Wiegand, No 2,296 (H)

P. PENNSYLVANICUM L, var *LÆVIGATUM* Fernald Introduced. Mingan seigniory, Mingan, dooryard, C No. 90,405

P. arifolium L. Mingan seigniory Sheldrake river, damp soil, August 24, 1882, D. N Saint-Cyr (Q) This plant was not included in Saint-Cyr's published list

P. SAGITTATUM L. Introduced Mingan islands Grande île, July 24, 1882 D N. Saint-Cyr (Q)

P. CONVULVULUS L. Introduced. Mingan seigniory rivière au Tonnerre, D. N. Saint-Cyr (called *P. scandens*) (Q), Pointe-aux-Esquimaux, cultivated field, C No. 90,406

[*P. scandens* L.] of D. N. Saint-Cyr is *P. Convolvulus*.

CHENOPODIACEÆ (GOOSEFOOT FAMILY)

CHENOPODIUM ALBUM L. Introduced. Mingan, Pointe-aux-Esqui-
maux, and Natashkwan roadside, C. No. 90,407

Atriplex patula L. Rocky shores of Mingan islands. île Ste Gene-
viève, rocky limestone shore, C. No. 90,410 Phelypeaux: baie du
Milieu (Middle bay), J. A. Allen (Hb. Conn Agric Exp Sta, New Haven).

Record of D. N. Saint-Cyr is the var *hastata*.

A. patula var *hastata* (L.) Gray Saline shores, all along the coast
Mingan islands D. N. Saint-Cyr (called *A. patula* L.) (Q) Charnay
pointe au Maurier, marshy shore, C. No. 90,408 Archipel du Vieux-
Fort île Herbée, sea strand, C. No. 90,409

Salsicornia europæa L. Known only from Seven Islands Old Fort
river, C. B. Robinson, No. 716 (H)

Salsola Kali L. Mingan seigniory Pointe-aux-Esqui-maux, strand,
C. No. 90,411

CARYOPHYLLACEÆ (PINK FAMILY)

[*Spargularia rubra* (L.) J. and C. Presl] Recorded by L. O. Brunet
(B²) from "côte du Labrador, bord de la mer" Judging from the habitat
given, this is probably *S. canadensis*.

S. canadensis (Pers.) Don Brackish shores, occasional Mingan
islands île Ste Geneviève, rocky limestone shore, C. No. 90,412. Charnay
pointe au Maurier, gravelly shore, C. No. 90,413

S. salina J. and C. Presl Archipel du Vieux-Fort Bonne-Espérance,
sand of the seashore, J. A. Allen (Hb. Conn Agric Exp Sta, New Haven).

Sagina procumbens L. Wet places, occasional from île Kécarpou
eastward to the strait of Belle Isle Archipel du Blanc-Sablon. île Perro-
quets, wet turf, C. No. 90,414

S. nodosa (L.) Fenzl. Rocky shores or sand flats, frequent as far east
as îles Netagamou, and probably throughout Seven Islands C. B.
Robinson, No. 674 (H) Mingan seigniory Mingan river, sand flat in,
C. No. 90,416. Boishébert, rocky shore, baie des Moutons, C. No. 90,419

Arenaria lateriflora L., var. *typica* (Regel) St John Dry thickets and
borders of woods, throughout Also collected by Storer, C. W. Townsend,
D. N. Saint-Cyr, and Fernald and Wiegand.

A. lateriflora, var *angustifolia* (Regel) St John Seven Islands. C.
B. Robinson, No. 663 (H).

A. peplodes L. Sea strand, occasional Archipel de St Augustin
Bayfield island, sea strand, C. No. 90,423. Brest Blanc-Sablon, sandy sea
strand, M. L. Fernald and K. M. Wiegand, No. 3,349 Southern Labra-
dor Storer (H). Various published records probably belong with var
diffusa which is much commoner.

A. peplodes, var *diffusa* Hornem Sandy or rocky beaches, frequent
throughout. Archipel du Vieux-Fort île Herbée, sea strand, C. No.
90,425 Also collected by D. N. Saint-Cyr, C. B. Robinson, and Fernald
and Wiegand

A. peplodes, var *robusta* Fernald Sandy or gravelly sea strand,
common Seven Islands C. B. Robinson, No. 792 (H). Brest Blanc-
Sablon, sandy sea strand, M. L. Fernald and K. M. Wiegand, No. 3,348
(H).

[*A. SERPYLLIFOLIA* L.] Recorded by L O Brunet, and D N Saint-Cyr. They may have been dealing with *A litorea*

[*A. verna* L.] is erroneously recorded by Macoun (M) as collected by S. R. Butler on Caribou island Butler himself (B⁵) and W A Stearns (S¹) list this species, but indicate that it comes from Amour.

A. litorea Fernald Rocky and turfey shores, general Mingan islands Ile du Havre, D N Saint-Cyr (Q), Eskimo island, limestone sea-cliffs, C. No. 90,428, Ile Ste Geneviève, limestone boulder, C No 90,427.

[*A Michauxii* Hook] of D N Saint-Cyr is *A litorea*

[*A stricta* Michx] Recorded by D N. Saint-Cyr Specimen not seen, but is probably *A litorea*

[*A arctica* Steven] Recorded by D N Saint-Cyr from Mingan river This species is known from only three stations in eastern North America, all of them on serpentine rock The plant is probably *Sagina nodosa* which is very abundant on the flats of Mingan river.

A grænlantica Spreng Exposed crests in the Laurentian area, from Ouapitagone east to the strait of Belle Isle There is a doubtful record of D N Saint-Cyr from Mingan river Ile Ouapitagone rocky crest, C No 90,429 Ile Petit Mécatina rocky summits, C No 90,430.

[*Mœhringia lateriflora* Fenzl] *Arenaria lateriflora*, var *typica*

[*Honckenya peplodes* Ehrh] *Arenaria peplodes* or a variety of it.

Stellaria borealis Bigel Occasional Archipel Ouapitagone Romaine, wet cleft in rocks on island, C No. 90,431. Most of the published records probably belong with one of the varieties, which are much commoner

S borealis, var *isophylla* Fernald Wet places, and borders of damp woods, common throughout Lagorgendière Romaine river, wet woods by, C No 90,432 Archipel du Vieux-Fort Bonne-Espérance, J. A Allen, Nos 2 and 3 (H)

S borealis, var *floribunda* Fernald Pointe au Maurier, occasional as far east as, damp grassy places Seven Islands C B Robinson, No 664 (called *Alsine longifolia* (Muhl) Britton) (H) Natashkwan edge of thicket, C No 90,433 Charnay pointe au Maurier, grassy shore, C No. 90,434

S. crassifolia Ehrh Brackish or springy places, common throughout Archipel Ouapitagone Romaine, edge of a brackish pool, C. No 90,435 Also collected by D N. Saint-Cyr, J A Allen, and Fernald and Wiegand.

S. humifusa Rotth Brackish shores, throughout Archipel Ouapitagone Romaine, salt marsh, C No 90,440 Also collected by D N Saint-Cyr, J A Allen, C B Robinson, and Fernald and Wiegand.

S. longipes Goldie Open places near the shore, very common Various collections made by others and by the author are treated as this species They have various types of foliage, but all have similar inflorescences and flowers This species is an aggregate that has yet to be resolved

[*S. longipes*, var. *minor* Hook] of D N Saint-Cyr is *S. longipes*.

[*S Edwardsii* R. Br] *S longipes*

[*S. longifolia* Muhl] Recorded by D N Saint-Cyr from Watshishu. Specimen not seen, but is probably *S. longipes*.

[*S. GRAMINEA* L.] Recorded from Mingan islands July, 1884, île Ste Geneviève, D N. Saint-Cyr There is a cover labelled *S. graminea*, Mingan islands, July, 1882 Within is a sheet of *S. glauca* With , under which is a loose ticket saying "No 106a, île d'Orleans, June 29, 1882" Prof. M. L. Fernald says. "*S. glauca* abounds in the neighbourhood of Quebec" In view of the evidence cited above it seems clear that the plant in question came from île d'Orleans and not from the region considered here.

S. MEDIA (L) Cyrill¹ Introduced at numerous places Mingan seigniory: Pointe-aux-Esquimaux, C B Robinson, No. 646 (H)

[*Cerastium arvense* L] Probably one of the following species

C. Beeringianum C. and S Turfy and rocky shores, abundant. Mingan seigniory Pointe-aux-Esquimaux, limestone headland, C No. 90,818 Archipel Washicoutai île Triple, turfy ledges, C. No 90,819.

C. Fischerianum Seringe Known only from Brest Blanc-Sablon, abundant in damp runs and on mossy banks, limestone and calcareous sandstone terraces, M L Fernald and K M Wiegand, No 3,389.

[*C. Alpinum* L] Reported by D N Saint-Cyr from Mingan station.

C. VULGATUM L, var *hirsutum* Fries Introduced Mingan harbour D N Saint-Cyr (Q)

Lychnis alpina L Brest rivière à la Truite, south facing cliff of gneiss, C. No. 90,446

SILENE LATIFOLIA (Mill) Britt and Rendl. Reported from rivière au Tonnerre D N. Saint-Cyr (called *S. inflata* Sm) Specimen not seen

[*S. INFLATA* Sm.] *S. latifolia*

S. acaulis L, var. *exscapa* (All.) DC Exposed ledges and hilltops in the Laurentian area, from île Tête à la Baleine east to the strait of Belle Isle. Southern Labrador Storer (H) Île Gros Mécatina D N Saint-Cyr (Q) Archipel de St Augustin Anse portage, Cumberland island, rocky summit, C No. 90,448

PORTULACACEÆ (PURSLANE FAMILY)

Montia lamprosperma Cham. Rocky shores, throughout Archipel du Petit-Mécatina îles Netagamou, wet rocks, C. No 90,450 Brest. Blanc-Sablon, on the gneiss plain, M. L Fernald and K M Wiegand, No 3,042 (H)

Claytonia caroliniana Michx Seven Islands. Manowin island, D N Saint-Cyr (Q)

NYMPHÆACEÆ (WATER LILY FAMILY)

Nymphaeanthus variegatus (Engelm.) Fernald. Shallow ponds, common. Natashkwan slough in sand dunes, C No. 90,465.

RANUNCULACEÆ (CROWFOOT FAMILY)

Ranunculus aquatilis L., var *capillaceus* DC. Brest Brador, in a quiet brook, M. L Fernald and K. M Wiegand, No. 3,407 (H), anse des Dunes, shallow pond, C No 90,453

R. Cymbalaria Pursh Brackish shores, throughout. Seven Islands C. B. Robinson, No. 719 (H) Mingan islands Verrill, Hyatt, and Shaler (Y) Archipel de Kécarpou îles Affligées, edge of pool, C. No. 90,455.

R. Cymbalaria, f. *hebecaulis* Fernald Île à la Chasse; and Mingan seigniory. Betchouane, rocky limestone shore, C. No. 90,458.

R. hyperboreus Rottb. Moist hollows on outer islands and exposed headlands from Romaine to the strait of Belle Isle Archipel Ouapitagon. Romaine, growing in wet moss on island, C No. 90,459 Iles Affligées, île Kécarpoui, îles Netagamiou Archipel du Vieux-Fort: Bonne-Espérance, J A Allen, No 47 (H) Brest Longue pointe

[*R. Flammula* L., var. *reptans* (L.) Mey.] Reported from Mingan river, D N Saint-Cyr Specimen not seen

R. reptans L Sandy borders of ponds, occasional. Natashkwan. Brest Jones point, sandy pond shore, C No 90,461, sandy margins of small ponds, on the gneiss plain, M. L Fernald and K. M. Wiegand, No 3,414 (H)

R. reptans, var. *ovalis* (Bigel.) T. and G Archipel du Blanc-Sablon Greenly island, J A Allen (called *R. Flammula* L., var. *reptans* Mey) (Hb Conn Agric Exp Sta, New Haven).

R. abortivus L Calcareous region of Mingan islands and the strait of Belle Isle. Mingan seigniory Pointe-aux-Esquimaux, alder thicket, C W. Townsend (H) and C No 90,462 Brest Blanc-Sablon, damp limestone and calcareous sandstone terraces, M L Fernald and K M Wiegand, No 3,417 (H)

R. pennsylvanicus L Mingan islands D. N. Saint-Cyr (Q). Boishébert Tabatière, meadow, C No 90,454 The latter collection has the leaves bluntly, instead of sharply, cut, the upper ones broader, and the stems much less hispid than in typical *R. pennsylvanicus* It seems, however, to be a state due to an unusual amount of shade

R. REPENS L Introduced, observed at Mingan seigniory Pointe-aux-Esquimaux

R. ACRIS L Introduced at numerous settlements Brest Blanc-Sablon, doorvard, C No 90,463

R. ACRIS, var. *STEVENI* (Andrz.) Lange Introduced Pointe-aux-Esquimaux, Natashkwan grassy shore, C No 90,464

[*Thalictrum alpinum* L.] Reported from Mingan islands St Charles island, D N Saint-Cyr Specimen not seen, but the plant is common on Anticosti

T. confine Fernald Calcareous region of Mingan islands Mingan seigniory Mingan, C W Townsend (H) Mingan islands Eskimo island, top of limestone shingle, C No 90,466

[*T. dioicum* L.] of D N Saint-Cyr and probably of all published records is *T. polygamum*

T. polygamum Muhl Wet or rocky shores, frequent throughout Charnay rivière Etamamiou, grassy shore, C No 90,468. Also collected by D N Saint-Cyr, C W Townsend, J A Allen, C. B Robinson, and Fernald and Wiegand.

[*Thalictrum labradoricum* Greene] Ottawa Nat, xxiv, 53-4 (1910) Based on W A (erroneously written W E.) Stearns, from Labrador, 1875 (U No 257,767), and A. P Low, thickets along the upper west branch of Hamilton river, Que, July 7, 1894. (C. No. 4,335) An examination of the former specimen and a study of the description give no evidence of diagnostic characters The plant is interpreted as *T. polygamum*, var. *hebecarpum*

[*T. Cornuti* L.] *T. polygamum*

[*Anemone parviflora* Michx.] Reported (B²) from Natashkwan: "Sur les rochers, 1864, Commandant Fortin" Fortin also collected on Anticosti island, where this species is common, and it is probable that the plant came from Anticosti rather than from Natashkwan, a region of sand-plain and gneissic rocks

Anemone canadensis L. Reported from Mingan islands July 23, 1882, Eskimo island, D N. Saint-Cyr (published as *A. pennsylvanica*). Specimen not seen

[*A. pennsylvanica* L.] of D N Saint-Cyr would be *A. canadensis*.

Caltha palustris L. Wet, open places, region of Mingan islands and strait of Belle Isle Mingan seigniory Mingan, and Pointe-aux-Esquimaux, C. W. Townsend (H). Mingan islands D. N. Saint-Cyr (Q), Verrill, Hyatt, and Shaler (Y); île du Havre, île à la Chasse, and île Ste Geneviève. Brest Longue pointe, grassy brookside, C No 90,469. Blanc-Sablon, abundant by streams, limestone and calcareous sandstone terraces, M L Fernald and K. M. Wiegand, No 3,444 (H)

Coptis trifolia (L.) Salisb. Wet thickets and woods, very abundant throughout Mingan islands D N Saint-Cyr (Q) Archipel de St. Augustin Bayfield island, mossy, shaded brookside, C No 90,470

Actaea rubra Willd. Rich woods, common in the calcareous region of Mingan islands and the strait of Belle Isle, occasional throughout Bois-hébert baie des Moutons, grassy hillside, C No 90,472. Archipel de St. Augustin Bayfield island, grass covered dunes, C No 90,471.

A. rubra, f. *neglecta* (Gillm.) Robinson Growing with the preceding. Observed only in the calcareous region of Mingan islands île Ste Geneviève, mossy woods, C No 90,474.

FUMARIACEÆ (FUMITORY FAMILY)

Corydalis sempervirens (L.) Pers Mingan river at a point west of the river, D. N. Saint-Cyr (called *C. glauca*) (Q).

[*C. glauca* Pursh] *C. sempervirens*

CRUCIFERÆ (MUSTARD FAMILY)

Diaba. Published records based on specimens that have not been seen are not included, as their disposition is too uncertain to be done satisfactorily

D. nivalis Lalx Labrador Dr Bryant (H) J. A. Allen and others have collected this species in eastern Labrador, and it is possible that this specimen came from there too. Dr Bryant, however, did not go east of Chateau bay, so the chances are great that he found this plant somewhere on the south shore of the peninsula

D. megasperma Fernald and Knowlton Mingan islands. Eskimo island, limestone sea-cliffs, C. No. 90,476, île Ste. Geneviève, top of limestone shingle, C. No. 90,475. Otherwise known only from Gaspé peninsula.

D. incana L. Turfy headlands, occasional. Mingan seigniory Pointe-aux-Esquimaux, C W. Townsend (H). Île Kécarpou. grassy gully, C No. 90,477 Recorded by D N. Saint-Cyr from Watshishu His plant is the var. *confusa*.

D. incana, var. *confusa* (Ehrh.) Poir. Turfy headlands and hillsides near the sea, common. Mingan seigniory Watshishu, D. N. Saint-Cyr (called *D. incana*) (Q). Natashkwan river C. W. Townsend (H) Île Kécarpoui turfy hillside, C. No 90,480

D. aurea Vahl Mingan islands Chas. Lindon (H)

D. arabisans Michx. Mingan islands D N Saint-Cyr (called *D ramosissima* Desv.) (Q), Eskimo island, limestone sea-cliffs, C. No 90,483. The plant so-called by D N Saint-Cyr is the var. *orthocarpa*

D arabisans, var. *orthocarpa* Fernald and Knowlton. Mingan islands. D. N. Saint-Cyr (called *D arabisans*) (Q) Mingan seigniory Pointe-aux-Esquimaux, rocky limestone headland, C No. 90,485 Archipel Ouapitagne Romaine, rocky crests, C No 90,484

[*D ramosissima* Desv.] of D N Saint-Cyr is *D. arabisans*

[*D alpina* L.] recorded from Watshishu, D. N. Saint-Cyr Specimen not seen

[*D alpina* L., var. δ Hook.] recorded from Labrador, L O Brunet (B²)

[*D alpina* L., var. *contorta* Ehrh.] recorded from Labrador, L O Brunet (B²)

[*D alpina* L., var. γ *borealis* T and G.] recorded from Labrador, anse des Dunes, L O Brunet (B²)

[*D glabruscula* L.] recorded from Mingan islands D N Saint-Cyr Specimen not seen

THLASPI ARVENSE L Introduced at several settlements. Seven Islands C B Robinson, No 842 (H) Mingan seigniory Sheldrake river, D N Saint-Cyr (Q) Coacoachou, St Augustin, and Chevalier. St Paul, dooryard, C No 90,486

LEPIDIUM SATIVUM L Introduced Mingan seigniory Pointe-aux-Esquimaux, cultivated field, C No 90,487

Subularia aquatica L Etamamiou, and Brest rivière Blanc-Sablon, shallow, sandv-bottomed pond, M L Fernald and K M Wiegand, No. 3,472 (H), rivière Blanc-Sablon, edge of slough from, C No 90,488

CAPSILLA BURSA-PASTORIS (L.) Medic Introduced, at most of the settlements Pontchartrain Vieux-Fort, path, C No 90,489

Cakile edentula (Bigel.) Hook. Rivière Netagamou, as far east as, sandy beaches, infrequent Seven Islands C B Robinson, No 666 (H). Mingan islands Île du Havre, D N Saint-Cyr (called *C americana*) (Q) Natashkwan river C W Townsend (H) St Vincent rivière Netagamou, sand beach, C No 90,490

[*C americana* Nutt.] *C edentula*

BRASSICA ARVENSIS (L.) Ktze Introduced Mingan, Mingan seigniory Pointe-aux-Esquimaux, cultivated field, C No. 90,491

Erysimum asperum DC. Known from Mingan islands Chas. Lindon (H); Verrill, Hyatt, and Shaler (called *E lanceolatum*) (Y)

[*E lanceolatum* R Br.] of Verrill is *E asperum*

Cochlearia No attempt has been made to correlate the published records of this genus in cases where the specimens have not been seen

C. cyclocarpa S F Blake Maritime rocks and shores, especially on the outer islands and exposed headlands, common Mingan islands: Île Niapisca, Verrill, Hyatt, and Shaler (called *C. tridactylites*) (Y). Archipel Washicoutai Île Triple, ledges, just above the reach of the sea, C. No.

90,834. Archipel du Blanc-Sablon île Perroquets, crevices of maritime rocks, enriched by the dung of sea-birds, J. A. Allen, No. 57 (called *C. anglica*) Brest Blanc-Sablon, wet limestone and calcareous sandstone terraces, M. L. Fernald and K. M. Wiegand, No. 3,470 (called *C. officinalis*) (H).

[*C. officinalis* L.] Recorded by L. O. Brunet (B²) from Labrador. Fournier. It probably is *C. cyclocarpa*.

C. tridactylites Banks. Maritime rocks, occasional, throughout. Southern Labrador Storer (H). Mingan islands Eskimo island, C. W. Townsend (H). Archipel du Vieux-Fort Bonne-Espérance, crevices of maritime rocks, enriched by the refuse of the fishery, J. A. Allen (called *C. anglica*) (H). Recorded by Verrill (V¹). The plant is *C. cyclocarpa*.

Radicula palustris (L.) Moench Mingan seigniory Watshishu, D. N. Saint-Cyr (called *Nasturtium palustre*) (Q).

R. palustris var. *hispida* (Desv.) Robinson Lagorgendière Romaine, grassy shore, C. No. 90,493. Archipel de St. Augustin Bayfield island, grassy shore, C. No. 90,492.

[*Nasturtium palustre* DC.] *Radicula palustris*

Barbarea orthoceras Ledeb. Meadows and grassy brooksides, from Romaine east to the strait of Belle Isle, occasional. Boushébert Tabatière, meadow, C. No. 90,495. Brest Jones point, grassy brookside, C. No. 90,494, Brador, abundant, along streams and rills, M. L. Fernald and K. M. Wiegand, No. 3,485 (H), abundant by brooks and by springy places, limestone and calcareous sandstone terraces, Blanc-Sablon, M. L. Fernald and K. M. Wiegand, No. 3,484 (H).

[*Cardamine pratensis* L.] Reported (B²) from Natashkwan. Fournier. It is probably the following var. *palustris*.

C. pratensis L., var. *palustris* Wimm. and Grab. Brest. Jones point, brookside, C. No. 90,496 (H).

C. pennsylvanica Muhl. Brest Blanc-Sablon, by brooks and rivulets, limestone and calcareous sandstone terraces, M. L. Fernald and K. M. Wiegand, No. 3,487 (H).

Arabis alpina L. Strait of Belle Isle, region of the sedimentary rocks. Archipel du Blanc-Sablon Greenly island, J. A. Allen (H). Brest. pointe à Peau, grassy brookside, C. No. 90,497, Blanc-Sablon, very abundant in wet places, limestone and calcareous sandstone terraces, M. L. Fernald and K. M. Wiegand, No. 3,491 (H).

A. Drummondii Gray. Mingan islands July 4-5, 1861, Verrill, Hyatt, and Shaler (Y). It also occurs at the strait of Belle Isle in Newfoundland and Labrador.

SARRACENIACEÆ (PITCHER-PLANT FAMILY)

Sarracenia purpurea L. Bogs and tundra, common throughout. Mingan seigniory. Watshishu, D. N. Saint-Cyr (Q). Lagorgendière Romaine, tundra, C. No. 90,498.

DROSERACEÆ (SUNDEW FAMILY)

Drosera rotundifolia L. Bogs and pond shores, abundant throughout. Brouague: boggy pond margin, C. No. 90,499. Also collected by C. W. Townsend and D. N. Saint-Cyr.

[*D. intermedia* Hayne] of D. N. Saint-Cyr is *D. rotundifolia*.

D. anghica Huds Sphagnum bogs, occasional as far east as île Tête à la Baleine Natashkwan sphagnum bog, C. No 90,502 Ile Ouapitagone edge of pool in tundra, C. No 90,500 Archipel du Gros-Mécatina île Tête à la Baleine, sphagnum bog, C. No. 90,501.

D. longifolia L. Natashkwan sphagnum bog, C. No 90,503.

CRASSULACEÆ (ORPINE FAMILY)

Sedum villosum L. Archipel de Kécarpou îles Affligées, and île Kécarpou, turfy hilltop, C. No 90,505 This seems to be the first collection of this species in North America south of Greenland.

S. roseum (L.) Scop. Saline shores, throughout, especially abundant and luxuriant in the calcareous region of Mingan islands Mingan seigniorie Mingan, C. W. Townsend (H), Ponte-aux-Ésquimaux, rocky limestone headland, C. No 90,504

† *S. Rhodiola* DC | *S. roseum*

SAXIFRAGACEÆ (SAXIFRAGE FAMILY)

[*Saxifraga nivalis* L.] Erroneously reported by Macoun (M) as collected on Caribou island by S. R. Butler Neither Butler (B^s) nor W. A. Stearns (Sⁱ) lists the species

Saxifraga aizoides L. Known within our area only from Brest Blanc-Sablon, limestone and calcareous sandstone terraces, M. L. Fernald and K. M. Wiegand, No 3,518 (H) Recorded from Mingan islands île Ste Geneviève, D. N. Saint-Cyr The plant so labelled is *S. oppositifolia*. In (Y) there is an unmounted specimen labelled Mingan islands, collected by Verrill, Hyatt, and Shaler This record is not included in their published list (Vⁱ) and the plants in question are so exactly similar that they would seem to be a part of the collection from Anticosti.

S. cæspitosa L. (*S. grænlantica* L.) Turfy hilltops and hillsides, outer islands and exposed headlands, occasional throughout Ile Kécarpou turfy hilltops, C. No 90,507 Also collected by Verrill, Hyatt, and Shaler; Dr Bryant, C. W. Townsend, D. N. Saint-Cyr, and Fernald and Wiegand In Dr Wm Kelly's manuscript list

[*S. grænlantica* L.] *S. cæspitosa*

S. Aizoon Jacq. Abundant on the calcareous ledges of Mingan islands, and on syenite at baie des Moutons Mingan islands D. N. Saint-Cyr, Verrill, Hyatt, and Shaler, île Ste Geneviève, top of limestone shingle, C. No 90,508 Boishébert baie des Moutons, on disintegrating perthitic syenite ledge, C. No 90,509 In Dr Wm Kelly's manuscript list.

S. oppositifolia L. Wet calcareous cliffs of Mingan islands, also at Forteau bay, on the Labrador side of the strait of Belle Isle Mingan islands Eskimo island, C. W. Townsend (H), Eskimo island, wet limestone cliffs, C. No. 90,510, D. N. Saint-Cyr (Q)

Mutella nuda L. Mossy woods. Common in calcareous region of Mingan islands and the strait of Belle Isle, known in the Laurentian area only at Natashkwan Mingan islands île Ste Geneviève, D. N. Saint-Cyr (Q). Brest rivière Blanc-Sablon, thicket by, C. No 90,511.

Parnassia parviflora DC. Abundant on limy ledges and shores, region of Mingan islands. île du Havre, D. N. Saint-Cyr (Q); Eskimo island, St. Charles island, and île à la Chasse. Mingan seigniory: Betchouane, rocky limestone shore, C. No. 90,513.

P. palustris L. Southern Labrador Storer (H).

P. Kotzebuei C. and S. Brest: Blanc-Sablon, limestone and calcareous sandstone terraces, M. L. Fernald and K. M. Wiegand, No. 3,536 (H).

Ribes hirtellum Michx. Thickets and borders of woods, throughout. Mingan seigniory: Pointe-aux-Esquimaux, C. W. Townsend (H). Goy-nish: îles Boisées de Cap Blanc, Washtawouka, edge of woods, C. No. 90,514. Charnay. pointe au Maurier, border of salt marsh, C. No. 90,513. Brest: Blanc-Sablon, by a brook, on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 3,538 (H). Recorded by Verrill. The plant is the var. *calvicola*.

R. hirtellum, var. *calvicola* Fernald. Mingan islands: Verrill, Hyatt, and Shaler (called *R. hirtellum*) (Y), Eskimo island, top of limestone shingle, C. No. 90,516.

[*R. americanum* Mill] A sheet of this is contained in the cover of *R. lacustre* from Watshishu or Mingan islands, D. N. Saint-Cyr. It is without data, and will not be credited here.

R. lacustre Poir. Rich woods on Mingan islands Verrill, Hyatt, and Shaler (Y); Eskimo island, mossy woods, C. No. 90,517. D. N. Saint-Cyr records this from Mingan islands, but his collection is labelled as coming from Watshishu. S. R. Butler records (B⁵) this species, "ravines, common in the interior." In Dr. Wm. Kelly's manuscript list.

R. prostratum L'Hér. Thickets and borders of woods, very common throughout. St Vincent. rivière Netagamou, edge of woods, C. No. 90,520. Also collected by C. W. Townsend, Storer, D. N. Saint-Cyr, and Fernald and Wiegand. Recorded by S. R. Butler (B⁶).

R. triste Pall. Mingan seigniory: Pointe-aux-Esquimaux, C. W. Townsend (H), Mingan islands: Eskimo island, mossy woods, C. No. 90,521. Recorded by Fernald, Rhodora, xiii, 125 (1911), but the specimen is of the var. *albinervium* as it is labelled.

R. triste, var. *albinervium* (Michx.) Fernald. Brest: Blanc-Sablon, limestone and calcareous sandstone terraces, M. L. Fernald and K. M. Wiegand, No. 3,544 (H).

ROSACEÆ (ROSE FAMILY)

Spiræa latifolia Borkh. Seven Islands: C. B. Robinson, No. 683 (H).

S. latifolia, var. *septentrionalis* Fernald. Natashkwan: sand dunes, C. Nos. 90,522 and 90,523.

Pyrus arbutifolia (L.) L. f., var. *atropurpurea* (Britton) Robinson. Tundra, occasional as far east as Romaine. Mingan; Piashti bay; and Lagorgendière: Romaine, tundra, C. No. 90,524.

P. americana (Marsh.) DC. Very common in wooded hillsides and valleys. Lagorgendière: Romaine, wooded riverside, C. No. 90,525. Eskimo river: J. A. Allen, No. 12 (H). Reported by W. A. Stearns (S¹), S. R. Butler (B⁶), and R. Bell (B⁴).

[*P. americana* DC., var. *microcarpa*] Reported by W. A. Stearns (S¹), "not rare." This is probably *P. americana*.

[*P. sambucifolia*.] Indicated by R. Bell (B⁴) as growing all over the southern part of the peninsula. This should probably be interpreted as *P. americana*.

Amelanchier Bartramiana (Tausch) Roemer. Thickets and borders of woods, very abundant throughout. Mingan seignior: Eskimo island, shrub 3 feet high, mossy woods, C No. 90,529 Also collected by C W. Townsend, and C. B. Robinson. Reported by S. R. Butler (B⁵).

[*A. canadensis* T. and G.] of D N Saint-Cyr is in part *A. laevis* and in part *A. stolonifera* Reported by J B A. Ferland (F¹), and A S. Packard (P), it is probably *A. Bartramiana*

[*A. canadensis* T. and G., var. *oligocarpa* Gray.] *A. Bartramiana*

[*A. stolonifera* Wiegand.] There is a good flowering spray mounted on a sheet with *A. laevis* (Q) collected by D N. Saint-Cyr at Mingan, Watshishu, or Gros Mécatina

[*A. laevis* Wiegand.] A sheet collected by D N Saint-Cyr containing *A. laevis* and *A. stolonifera* (called *A. canadensis*) It is recorded as coming from Watshishu, June, 1882, and Gros Mécatina, July 12, 1885, but the cover is labelled Mingan, June, 1882 There is too much confusion here to allow this to be accepted as the sole record for the region

Fragaria virginiana Duchesne Dry, grassy slopes, occasional as far east as Watshishu. Mingan islands. Eskimo island, grassy clearing, C No 90,532. Mingan seignior: Pointe-aux-Esquimaux, C. W. Townsend, (H); Watshishu, D N Saint-Cyr (called *F. vesca*)

F. virginiana, var. *terræ-novæ* (Rydb.) Fernald and Wiegand. Occasional, throughout Seven Islands D. N. Saint-Cyr (called *F. virginiana*) (Q). Natashkwan: dune hollow, C No 90,531 Brest Blanc-Sablon, M. L. Fernald and K M Wiegand, Nos 3,559 and 3,563

[*F. vesca* L.] of D N. Saint-Cyr is *F. virginiana*.

Potentilla monspeliensis L. Grassy shores and banks, throughout. Mingan islands île du Havre, D N Saint-Cyr (called *P. norvegica*) (Q). Archipel Washicoutai île Triple, grassy bank, C No. 90,533. Brest Blanc-Sablon, limestone and calcareous sandstone terraces and along brooks, M. L. Fernald and K. M. Wiegand, No 3 567 (H).

P. monspeliensis var. *norvegica* (L.) Rydb. Grassy shores and banks, throughout Archipel du Vieux-Fort île Herbée, grassy top of strand, C. No. 90,535.

[*P. norvegica* L.] of D. N. Saint-Cyr is *P. monspeliensis*. Record of S. R. Butler (B⁵) probably belongs with *P. monspeliensis* var. *norvegica*.

P. pectinata Raf Dry, open spots, calcareous region of Mingan islands. Mingan seignior: near Hudson's Bay Co.'s post, D. N. Saint-Cyr (called *P. pennsylvanica*) (Q), Mingan, grassy shore, C. No. 90,536; Pointe-aux-Esquimaux, rocky limestone headland, C. No. 90,537. In Dr. Wm. Kelly's manuscript list (called *P. strigosa*).

[*P. pennsylvanica* L.] of D. N. Saint-Cyr is *P. pectinata*.

P. palustris (L.) Scop. Bogs, borders of ponds, wet meadows, and shores, throughout. Natashkwan Little Natashkwan river, brackish bog at mouth of, C. W. Townsend (H) Boishébert: rocky shore, Tabatière, C. No. 90,538.

P. palustris, f. *subsericea* (Becker) Wolf. Archipel du Vieux-Fort: île Herbée, top of strand, C. No. 90,540.

P. palustris, var. *parvifolia* (Raf.) Fernald and Long. Wet shores, from Romaine east to the strait of Belle Isle, occasional. Archipel de Kécarpoui: île du Petit Rigolet, marshy shore, C. No. 90,541.

P. fruticosa L. Thickets and borders of woods in the calcareous region of Mingan islands and strait of Belle Isle. Mingan seigniory: Pointe-aux-Esquimaux, rocky limestone headland, C. No. 90,543. Eskimo island, and île Ste. Geneviève. Brest: Longue pointe, grassy brookside, C. No. 90,542; Blanc-Sablon, in damp places, M. L. Fernald and K. M. Wiegand, No. 3,573 (H).

P. tridentata Ait. Rocky and exposed situations, common throughout. Mingan seigniory: Watshishu, D. N. Saint-Cyr (Q). Île Ouapitagon: rocky crests, C. No. 90,544. Brest: Blanc-Sablon, in sand on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 3,584 (H).

P. Anserina L. Rocky or marshy saline shores, or beaches, abundant throughout. Mingan seigniory. Watshishu, D. N. Saint-Cyr (Q). Archipel Ouapitagon: Romaine, strand, C. No. 90,545.

P. Anserina, var. *sericea* Hayne Sandy strands, infrequent. Pointe-aux-Esquimaux; and archipel du Vieux-Fort île Herbée, sand beach, C. No. 90,546.

P. pacifica Howell. Brackish shores, occasional. Seven Islands. C. B. Robinson, No. 689 (called *Argentina Anserina*) (H). Mingan seigniory: Mingan, C. W. Townsend (H). Brest: Blanc-Sablon, brackish shore, M. L. Fernald and K. M. Wiegand, No. 3,587 (H).

[*Sabbaldiopsis tridentata* (Soland.) Rydb.] *Potentilla tridentata*.

Geum macrophyllum Willd. Wet thickets and meadows, in the calcareous region of Mingan islands and the strait of Belle Isle. Mingan seigniory. Pointe-aux-Esquimaux, alder thicket, C. No. 90,548. Betchouane; île du Havre; île Ste. Geneviève. Brest. Jones point, grassy brookside, C. No. 90,549, Blanc-Sablon, abundant in damp thickets, limestone and calcareous sandstone terraces, M. L. Fernald and K. M. Wiegand, No. 3,592 (H).

G. rivale L. Mingan islands and the strait of Belle Isle, wet meadows and bogs. Mingan islands. D. N. Saint-Cyr (Q); Verrill, Hyatt, and Shaler: île à la Chasse, edge of thicket, C. No. 90,551. Brest. Jones point, swale near pond, C. No. 90,550.

Dryas integrifolia Vahl. Limestone cliffs and ledges of Mingan islands. Mingan island, Verrill, Hyatt, and Shaler (Y); Mingan island, D. N. Saint-Cyr (Q), Eskimo island, C. W. Townsend (H), and C. Nos. 90,547 and 90,552. St. Charles island, and île Ste. Geneviève. In Dr. Wm. Kelly's manuscript list.

D. N. Saint-Cyr reports this species from Gros Mécatina, July 12, 1885. Specimen not seen. The plant would not be expected on this island in the Laurentian area.

Rubus idæus L., var. *canadensis* Richardson. Widely distributed in thickets and borders of woods. Natashkwan river. C. W. Townsend (H). Lagorgendière; Romaine, edge of woods, C. No. 90,554. Legardeur: rivière Coacoachou, grassy shore, C. No. 90,553. Southern Labrador: Storer (H).

A specimen from Seven Islands: C. B. Robinson, No. 864, is cited by P. A. Rydberg in Bull. Torr. Bot. Club, xlii, 135 (1915) as *Rubus subarcticus* (Greene) Rydb. It is probably *R. idæus*, var. *canadensis*.

[*R. strigosus* Michx.] *R. idæus*, var. *canadensis*.

R. Chamæmorus L. Bogs and tundra, turfey hillsides, and even running into woods, very abundant, throughout. Archipel de Kécarpoui: île du Petit Rigolet, turfey hillside, C. No. 90,556. Also collected by Townsend, D. N. Saint-Cyr, and C. B. Robinson.

R. arcticus L. Grassy or turfey places, occasional throughout. Archipel du Vieux-Fort île Herbée, grassy top of strand, C. No. 90,558. Brest: Blanc-Sablon, M. L. Fernald and K. M. Wiegand, Nos. 3,067 and 3,069 (H). Reported by D. N. Saint-Cyr, S. R. Butler, and L. O. Brunet. Collection of Verrill's is of the var. *grandiflorus*.

R. arcticus, var. *grandiflorus* Ledeb. Grassy or turfey places, throughout. Southern Labrador: Storer; Dr. Bryant. Mingan islands: Verrill, Hyatt, and Shaler (called *R. arcticus*) (Y). Mingan seigniory: Mingan, C. W. Townsend (H), Pointe-aux-Esquimaux, mossy bank, C. No. 90,559. Brest: Brador and Blanc-Sablon, M. L. Fernald and K. M. Wiegand, Nos. 3,612 and 3,609 (H).

R. pubescens Raf. Open places or borders of woods, occasional throughout. St Vincent rivière Netagamiou, sand dunes at mouth of, C. No. 90,561. Also collected by C. W. Townsend, D. N. Saint-Cyr, and Fernald and Wiegand.

[*R. triflorus* Richards.] *R. pubescens*.

[*R. canadensis* L.] of D. N. Saint-Cyr is *R. pubescens*.

Dalibarda repens L. Mingan islands: île à la Chasse, July 21, 1882, D. N. Saint-Cyr (Q).

Alchemilla vulgaris L., var. *filiaculis* (Buser) Fernald and Wiegand. Brest. anse des Dunes, grassy brookside, C. No. 90,564.

A. vulgaris, var. *vestita* (Buser) Fernald and Wiegand. Archipel du Blanc-Sablon: Greenly island, J. A. Allen (Hb. Conn. Agric. Exp. Sta., New Haven). This variety has also been collected east of rivière Blanc-Sablon by Fernald and Wiegand, and C. W. Townsend.

Sanguisorba canadensis L. Bogs and wet thickets, general. Southern Labrador: Storer (H).

S. canadensis, var. *latifolia* Hook. (*S. sitchensis* C. A. Mey.) Bogs and wet thickets, very common, throughout. This variety with shorter, broader, ovate-cordate leaves, and a shorter spike is much commoner than the species. Pontchartrain Vieux-Fort, grassy shore, C. No. 90,565.

Prunus pennsylvanica L.f. Mingan seigniory. Mingan, C. W. Townsend (H), and wooded bank 3 miles up Mingan river, C. No. 90,566; Watshishu, D. N. Saint-Cyr (Q). R. Bell indicates (B⁴) that this species is general in the southern part of the peninsula. There seems to be no evidence, however, that it grows in the coastal regions east of Watshishu. Macoun (M) erroneously reports this from Caribou island as collected by S. R. Butler. Neither Butler (B⁵) nor Stearns (S¹) lists the tree at all.

LEGUMINOSÆ (PULSE FAMILY)

TRIFOLIUM PRATENSE L. Introduced. Mingan islands: Ile Ste. Geneviève, D. N. Saint-Cyr (Q). Mingan seigniory: Betchouane, grassy clearing, C. No. 90,567.

T. REPENS L. Introduced, common at many of the settlements. Brest: Blanc-Sablon, dooryard, C. No. 90,568.

T. HYBRIDUM L. Introduced. Mingan seigniory. Mingan, dooryard, C. No. 90,569.

T. PROCUMBENS L. Introduced. Mingan seigniory: rivière au Tonnerre, D. N. Saint-Cyr (Q).

[*Astragalus alpinus* L.] Erroneously recorded by Macoun (M) as collected at Caribou island by S. R. Butler. Butler himself (B^s) and W. A. Stearns (S¹) record it only from Amour, which is outside of the area treated here.

VICIA CRACCA L. Introduced at several places, as far east as St. Augustin. Mingan islands Grande Ile, D. N. Saint-Cyr (Q). St. Augustin river. Hudson's Bay Co. post, grassy bank near, C. No. 90,571. In Dr. Wm. Kelly's manuscript list.

Lathyrus maritimus (L.) Big. Saline shores, and turfy hillsides near the sea, abundant all along the coast. Seven Islands: C. B. Robinson, No. 777 (H). Mingan seigniory: Watshishu, D. N. Saint-Cyr (Q). Mingan islands: Ile Ste. Geneviève, limestone shingle, C. No. 90,572.

[*L. maritimus*, var. *aleuticus* Greene.] Southern Labrador: Storer (H). This plant does not seem worthy of distinction even as a form. The plants seem to be merely young or dwarfed individuals of exposed habitats, and should be treated as *L. maritimus*.

[*L. palustris* L.] Reported by J. Richardson (R¹), and S. R. Butler (B^s). The plants are probably of the var. *pilosus*.

L. palustris L., var. *pilosus* (Cham) Ledeb. Boggy, usually saline shores, occasional. Seven Islands: C. B. Robinson, No. 913 (H). Mingan islands St. Charles island, D. N. Saint-Cyr (Q). Natashkwan: Little Natashkwan river, mouth of, C. W. Townsend (H). Charnay pointe au Maurier, brackish shore, C. Nos. 90,575 and 90,576. Brest: Blanc-Sablon, M. L. Fernald and K. M. Wiegand, No. 3,645 (H).

OXALIDACEÆ (WOOD SORREL FAMILY)

Oxalis montana Raf. (*O. Acetosella* L.) Deep mossy woods, occasional. Seven Islands: C. B. Robinson, No. 892 (H). Ile du Havre. Natashkwan river: C. W. Townsend (H). Lagorgendière: wet woods by Olomanoshibo river, C. No. 90,577. St. Augustin river.

O. CORNICULATA L. Introduced. Mingan seigniory: rivière au Tonnerre, D. N. Saint-Cyr (Q).

POLYGALACEÆ (MILKWORT FAMILY)

[*Polygala paucifolia* Willd.] Reported from Mingan seigniory: Watshishu, D. N. Saint-Cyr. Specimen not seen, but the record may be all right.

CALLITRICHACEÆ (WATER STARWORT FAMILY)

Callitriche palustris L. Shallow ponds, general. Archipel Ouapitagon: île du Havre, Romaine, filling a rock pool, C. No. 90,579. Charnay: rivière Etamamiou, muddy brook, C. No. 90,578.

C. anceps Fernald. Brest: rivière Blanc-Sablon, shallow, sandy-bottomed pools, M. L. Fernald and K. M. Wiegand, Nos. 3,648 and 3,649 (H).

C. autumnalis L. Brest: rivière Blanc-Sablon, shallow, sandy-bottomed pools, M. L. Fernald and K. M. Wiegand, No. 3,647 (H).

EMPETRACEÆ (CROWBERRY FAMILY)

Empetrum nigrum L. Hillsides, ledges, or even in bogs, very abundant and universally distributed. Southern Labrador: Storer (H). Mingan seigniory: Pointe-aux-Esquimaux, rocky headland, C. No. 90,580, and C. W. Townsend (H). Archipel de St. Augustin: île des Génévriers, rocky crest, C. No. 90,581. Reported by C. B. Robinson (R²), J. B. A. Ferland (F¹), and D. N. Saint-Cyr.

E. atropurpureum Fernald and Wiegand. Archipel de St. Augustin: île des Génévriers, rocky crest, C. No. 90,582.

E. Eamsii Fernald and Wiegand. Rocky or sandy hilltops from baie des Moutons east to the strait of Belle Isle. Baie des Moutons: Boishébert Tabatière, J. B. A. Ferland (H). Brouague: Petite rivière Coxipi, rocky crest, C. No. 90,583. Vieux-Fort; St. Paul; and Brest: Blanc-Sablon, abundant on sand and rock, on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 3,661 (H).

[*E. rubrum* Willd.] of J. B. A. Ferland (F¹) is *E. Eamsii*

AQUIFOLIACEÆ (HOLLY FAMILY)

Nemopanthus mucronata (L.) Trel. Thickets, occasional, as far east as baie des Moutons. Seven Islands: C. B. Robinson, No. 783 (H). Mingan seigniory: Mingan, granite hills, C. No. 90,584. Natashkwan river: C. W. Townsend (H).

ACERACEÆ (MAPLE FAMILY)

Acer spicatum Lam. Seven Islands: C. B. Robinson, No. 898 (H). Mingan; and Mingan islands: Eskimo island, wooded bank, C. No. 90,587.

BALSAMINACEÆ (TOUCH-ME-NOT FAMILY)

Impatiens biflora Walt. Mingan islands: Eskimo island, wet thicket, C. No. 90,588.

RHAMNACEÆ (BUCKTHORN FAMILY)

Rhamnus alnifolia L'Hér. Rich woods, region of Mingan islands: Ile Ste. Geneviève, edge of woods, C. No. 90,589. Observed at Eskimo island; Ile à la Chasse; and Pointe-aux-Esquimaux.

GUTTIFERÆ (ST. JOHN'S-WORT FAMILY)

Hypericum boreale (Britton) Bicknell. Mingan seigniory: Mingan river, sand flat in, C. No. 90,590.

H. virginicum L. Seven Islands: C. B. Robinson (called *Triadenum virginicum* (L.) Raf.), (C and H).

[*Triadenum virginicum* (L.) Raf.] *Hypericum virginicum*

CISTACEÆ (ROCKROSE FAMILY)

Hudsonia tomentosa Nutt. var. *intermedia* Peck Seven Islands: C. B. Robinson, No. 836 (H).

VIOLACEÆ (VIOLET FAMILY)

[*Viola cucullata* Ait.] Natashkwan river: C. W. Townsend (H). Verified by E. Brainerd, but it is a young plant, badly smashed, and with two leaves only.

This species is recorded by J. Richardson (R¹), and D. N. Saint-Cyr. Specimens not seen.

Viola nephrophylla Greene. Wet woods in calcareous region of Mingan islands. Mingan seigniory Pointe-aux-Esquimaux, C. W. Townsend (H). Mingan islands: Ile Ste. Geneviève, boggy thicket, C. No. 90,591.

V. Selkirkii Pursh. Brest. pointe à Peau, moist thicket, C. No. 90,592. D. N. Saint-Cyr records this species from Mingan harbour, June 26, 1882. The plant is all right, but a loose ticket under the plant says Bois Gomin, près Quebec, June 12, 1884. This record should be excluded.

V. palustris L. Southern Labrador. Dr. Bryant (H).

V. pallens (Banks) Brainerd. Meadows, bogs, and mossy woods, common throughout Ile Ouapitagon: tundra, C. No. 90,594.

[*V. blanda* Willd.] Recorded by S. R. Butler (B²), L. O. Brunet (B²), and D. N. Saint-Cyr. These are probably to be interpreted as *V. pallens*.

V. incognita Brainerd. Mossy woods and wet thickets, common throughout. Mingan seigniory: Pointe-aux-Esquimaux, C. W. Townsend (H). Brouague: Petite rivière Coxipi, alder thicket, C. No. 90,598. Brest: Blanc-Sablon, limestone and calcareous sandstone terraces, M. L. Fernald and K. M. Wiegand, Nos. 3,696 and 3,697 (H). A collection from Brouague: Robin bay, wet mossy thicket, August 4, 1915, C. No. 90,596, is of mature plants with the leaves quite glabrate, and the capsules green.

[*V. renifolia* Gray.] Listed by M. L. Fernald, *Rhodora*, xiii, 125 (1911) as found at Blanc-Sablon. The specimen on which this is based is cited under the following var. *Brainerdii*.

V. renifolia Gray, var. *Brainerdii* (Greene) Fernald. Brest: abundant on upper dry crests, limestone and calcareous sandstone terraces, Blanc-Sablon, M. L. Fernald and K. M. Wiegand, No. 3,704 (H).

[*V. rotundifolia* Michx.] Recorded from Mingan. D. N. Saint-Cyr, May-June, 1882. There is a confusion of the data, and there are several plants within the cover (Q), so that this cannot be verified.

V. labradorica Schrank. Mingan seigniory: Mingan, and Pointe-aux-Esquimaux, C. W. Townsend (H). Brest. Blanc-Sablon, limestone and calcareous sandstone terraces, and gravelly thicket back of strand, M. L. Fernald and K. M. Wiegand, Nos. 3,707 and 3,708 (H). Various published records probably bring the species to stations between these extremes.

[*V. Muhlenbergii* Torrey.] Reported by S. R. Butler (B⁶), is probably *V. labradorica*.

[*V. canina* L., var. *sylvestris* Regel] reported by W. A. Stearns (S¹) is probably *V. labradorica*, and likewise a record by D. N. Saint-Cyr.

V. adunca J. E. Smith. Natashkwan: edge of woods on sand dunes, C. No. 90,599.

[*V. TRICOLOR* L.] Reported from Pointe-aux-Esquimaux, D. N. Saint-Cyr.

ELÆAGNACEÆ (OLEASTER FAMILY)

Shepherdia canadensis (L.) Nutt. Abundant in rich woods in the calcareous region of Mingan islands. Eskimo island, C. W. Townsend (H); fle Ste. Geneviève, rocky bank, C. No. 90,600. Mingan seigniory: Pointe-aux-Esquimaux, rocky limestone headland, C. No. 90,601.

ONAGRACEÆ (EVENING PRIMROSE FAMILY)

Epilobium angustifolium L. Turfy hillsides and thickets, very abundant, throughout. Ile Kécarpou: turfy hillside, C. No. 90,602. Reported by J. Richardson (R¹), S. R. Butler (B⁶), and Verrill (V¹).

E. latifolium L. Mingan seigniory: river gravels, Mingan river, C. No. 90,604, and D. N. Saint-Cyr (Q). In Dr. Wm. Kelly's manuscript list.

[*E. molle* Torr.] Reported by W. A. Stearns (S¹), Bonne-Espérance, and the interior, very common. The identity of this is doubtful.

E. palustre L. Wet places, very abundant, throughout. Archipel de Kécarpou: îles Affligées, moist hillside, C. No. 90,605. Also collected by Storer, C. B. Robinson, J. A. Allen, and Fernald and Wiegand.

E. palustre, var. *monticola* Haussk. Seven Islands: C. B. Robinson (C). Archipel de Kécarpou: île du Petit Rigolet, grassy shore, C. No. 90,609. Archipel du Vieux-Fort: Bonne-Espérance, J. A. Allen, Nos. 55 and 56 (called var. *lineare*) (H).

E. palustre, var. *longirameum* Fernald and Wiegand. Archipel du Petit-Mécatina: îles Netagamou, grassy bank, C. No. 90,610. Archipel du Vieux-Fort: Bonne-Espérance, J. A. Allen, No. 53 (H). Brest: Blanc-Sablon, on the gneiss plain, in wet places back of the strand, M. L. Fernald and K. M. Wiegand, Nos. 3,720 and 3,726 (H).

E. glandulosum Lehm. Seven Islands: C. B. Robinson, No. 865 (called *E. adenocaulon*) (H). Brest: Blanc-Sablon, sandy strand, M. L. Fernald and K. M. Wiegand, Nos. 3,737 and 3,738 (H).

E. alpinum L. (*E. Hornemannii* Reich.) Wet places, occasional from baie des Moutons east to the strait of Belle Isle. Archipel du Blanc-Sablon: Greenly island, J. A. Allen, No. 50 (called *E. origanifolium*) (H). Brest: Jones point, grassy brookside, C. No. 90,612. Reported from Labrador (B²).

E. alpinum, f. *lactiflorum* (Haussk.) A. H. Moore. Boishébert. baie des Moutons, wooded brookside, C. No. 90,613.

[*E. canescens* L.] Recorded by D. N. Saint-Cyr. Linnæus does not seem to have made any such species. Specimen not seen

Circæa alpina L. Wet woods, occasional. Brouague. Petite rivière Coxipi, alder thicket by, C. No. 90,615.

HALORAGIDACEÆ (WATER MILFOIL FAMILY)

Myriophyllum exalbescent Fernald. Shallow ponds and streams, Mingan islands, and strait of Belle Isle. Mingan île du Havre. Brest. Longue pointe, shallow pond, C. Nos. 90,616 and 90,617; rivière Blanc-Sablon, shallow, sandy-bottomed pools, M. L. Fernald and K. M. Wiegand, No. 3,753 (H).

Hippuris vulgaris L. Shallow pools and bogs, generally distributed. Lagorgendière Romaine, shallow pool on isle, C. No. 90,618. Boishébert Tabatière, J. B. A. Ferland (H). Brest rivière Blanc-Sablon, shallow sandy-bottomed pools, M. L. Fernald and K. M. Wiegand, No. 3,757 (H)

H. vulgaris, var. *maritima* Hartm. Brackish marshes and river estuaries. Infrequent, but generally distributed. Mingan seigniory. Mingan, C. W. Townsend (H). Phelypeaux baie du Milieu, J. A. Allen (H) Brest: rivière à la Truite, brackish pool, C. No. 90,619.

ARALIACEÆ (GINSENG FAMILY)

Aralia hispida Vent. Mingan seigniory Mingan, sandy bank, C. No. 90,620. In Dr Wm Kelly's manuscript list

A. nudicaulis L. Thickets and mossy woods, rather common as far east as île du Petit Rigolet. Mingan seigniory Mingan, C. W. Townsend (H). Archipel de Kécarpouir île du Petit Rigolet, wooded gully, C. No. 90,622.

UMBELLIFERÆ (PARSLEY FAMILY)

Cicuta bulbifera L. Mingan islands: île du Havre, swampy pond shore, C. No. 90,623.

Ligusticum scoticum L. Saline shores and turfey hillsides near the sea, very abundant, throughout. Mingan seigniory: Watshishu, D. N. Saint-Cyr (Q). Île Kécarpouir: rocky shore, C. No. 90,626.

Cælopleurum lucidum (L.) Fernald. Turfy and rocky shores, common, all along the coast. Mingan seigniory: Mingan, C. W. Townsend (H). Natashkwan: C. W. Townsend (H). Boishébert: Tabatière, meadow, C. No. 90,626. Eskimo river: shore of river, J. A. Allen, No. 48 (H). Brest: Blanc-Sablon, sandy strand, everywhere, M. L. Fernald and K. M. Wiegand, No. 3,776 (H).

[*C. Gmelini*] so recorded by Wm. Palmer. It should be interpreted as *C. lucidum*.

Heracleum lanatum Michx. Meadows and wet thickets, common throughout. Mingan seigniory: Mingan, C. W. Townsend (H). Mingan islands: île Perroquets, D. N. Saint-Cyr (Q). Charnay: pointe au Maurier, swale, C. No. 90,627.

Conioselinum chinense (L.) BSP. Turfy hillsides, mossy woods or thickets, common throughout. Natashkwan river, C. W. Townsend (H). Brouague: Petite rivière Coxipi, rocky bank of, C. No. 90,628. Archipel du Vieux-Fort: Bonne-Espérance, J. A. Allen, No. 60 (H).

[*Angelica atropurpurea* L.] Recorded by S. R. Butler (B⁵) and L. O. Brunet (B²). The plant occurs in the calcareous parts of Newfoundland and Anticosti, and may be here on the "côte nord."

CORNACEÆ (DOGWOOD FAMILY)

Cornus canadensis L. In open or wooded places, nearly universal. Archipel Ouapitagone: Romaine, edge of thicket, C. No. 90,630. Also collected by C. W. Townsend, C. B. Robinson, Storer, and D. N. Saint-Cyr. Reported by L. O. Brunet (B²) and S. R. Butler (B⁵).

C. suecica L. Turfy and rocky shores, or hillsides near the sea, all along the coast Southern Labrador: Storer (H). Seven Islands: C. B. Robinson, No. 687 in part (H). Mingan seigniory. Watshishu, D. N. Saint-Cyr (Q). Archipel du Gros-Mécatina: île Tête à la Baleine, turfy shore, C. No. 90,633. Brest: Blanc-Sablon, on rocks or in sand on the gneiss plain. M. L. Fernald and K. M. Wiegand, No. 3,793 (H).

C. stolonifera Michx. Thickets and borders of woods, common on Mingan islands and strait of Belle Isle; occasional in deep woods and river valleys throughout Mingan islands: île Ste. Geneviève, edge of woods, C. No. 90,635, and D. N. Saint-Cyr (Q). Mingan seigniory. Mingan, C. W. Townsend (H). Brouague: Shekatika river, rocky bank of, C. No. 90,634.

ERICACEÆ (HEATH FAMILY)

Moneses uniflora (L.) Gray. Deep mossy woods, occasional throughout Mingan seigniory: Mingan, C. W. Townsend (H). Mingan islands: île à la Chasse, D. N. Saint-Cyr (Q). Natashkwan river. C. W. Townsend (H). Lagorgendière. Romaine, mossy woods, C. No. 90,636.

Pyrola minor L. Mossy woods, common in the calcareous region of Mingan islands and strait of Belle Isle, also at one station in the Laurentian area, Brouague. Mingan seigniory. Mingan, C. W. Townsend (H), Mingan, and mossy woods, C. No. 90,638, Mingan islands: Verrill, Hyatt, and Shaler (Y). Brouague: Petite rivière Coxipi, mossy evergreen woods, C. No. 90,637.

[*P. secunda* L.] Recorded by D. N. Saint-Cyr from Eskimo island, July 27, 1882. The cover (in Q) is marked Mingan islands, July, 1882, and within are several plants, under one of which is a loose ticket saying, îles d'Orléans, July 17, 1883. There is too much confusion here to allow this record to be accepted.

P. secunda L., var. *obtusata* Turcz. Mossy woods in the calcareous region of Mingan islands and at one other station. Southern Labrador: Storer (H). Seven Islands. C. B. Robinson (C). Mingan islands: D. N. Saint-Cyr (Q), limestone sea-cliffs, C. No. 90,640; île Ste. Geneviève, top of limestone shingle, C. No. 90,639.

[*P. secunda* L. var. *pumila* Gray] of D. N. Saint-Cyr is the var. *obtusata*

[*P. chlorantha* Sw.] Recorded from Mingan islands île aux Calculeaux, D. N. Saint-Cyr (Q). The cover labelled îles Mingan, July, 1882, contains three sheets of this species, under each plant is a loose ticket, two reading île Ste. Geneviève, July 17, 1882, and one, île d'Orleans, July 3, 1883. There is confusion here, but the record seems likely.

P. asarifolia Michx. Mingan islands: D. N. Saint-Cyr (called *P. rotundifolia* var. *asarifolia*) (Q).

P. asarifolia, var. *incarnata* (Fisch.) Fernald. Mossy woods and ledges, common in the calcareous region of Mingan islands Eskimo island, wet limestone sea-cliffs, C. No. 90,643; île à la Chasse, limestone ledge, C. No. 90,642; île Ste. Geneviève, limestone sea-cliffs, C. No. 90,641.

[*P. rotundifolia* L., var. *asarifolia* Hook.] of D. N. Saint-Cyr is *P. asarifolia*.

[*P. rotundifolia*, var. *uliginosa* Gray.] Record of D. N. Saint-Cyr for Mingan islands. Specimen not seen, but is probably *P. asarifolia*, var. *incarnata*.

Monotropa uniflora L. Uncommon. Seven Islands: C. B. Robinson, No. 751 (H). Natashkwan sandy fir woods, C. No. 90,644. Archipel du Gros-Mécatina: île Tête à la Baleine, sphagnum bog, C. No. 90,645.

M. Hypopitys L. Infrequent Seven Islands: C. B. Robinson, No. 875 (called *Hypopitys lanuginosa* (Michx.) Nutt.) (H). Mingan islands: île Ste. Geneviève, mossy woods, C. No. 90,646.

Ledum grænländicum Oeder. Bogs and thickets and borders of woods, almost universal. Archipel Ouapitagone Romaine, edge of thicket, C. No. 90,647. Also collected by C. W. Townsend, C. B. Robinson, Storer, and D. N. Saint-Cyr. Reported by S. R. Butler (B⁵), and L. O. Brunet (B¹).

[*L. latifolium* L.] *L. grænländicum*.

[*L. palustre* L.] of D. N. Saint-Cyr is *L. grænländicum*.

[*L. palustre* L., var. *angustifolium* Hook.] recorded by D. N. Saint-Cyr. Specimen not seen.

Rhododendron canadense (L.) BSP. Tundra, bogs, and wet thickets or woods, very common throughout. Lagorgendière. Romaine, tundra, C. No. 90,648. Also collected by C. W. Townsend, D. N. Saint-Cyr, and Verrill, Hyatt, and Shaler.

[*Rhodora canadensis* L.] *Rhododendron canadense*.

Louiseleuria procumbens (L.) Desv. Exposed hilltops and crests, occasional. Mingan islands. D. N. Saint-Cyr (Q). St. Augustin; and Pontchartrain: Vieux-Fort, heath on a raised beach, C. No. 90,650. Archipel du Vieux-Fort Bonne-Espérance, J. A. Allen (Hb. Conn. Agric. Exp. Sta., New Haven) Brest: Blanc-Sablon, on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 3,828 (H). Reported by S. R. Butler (B⁵) on archipel du Vieux-Fort: île de la Demoiselle.

[*Phyllodoce cærulea* (L.) Bab.] Two collections in the Gray herbarium, one by Dr. Storer, the other by Dr. Bryant, may have come from southern Labrador as did most of their collections, which are marked simply Labrador. Abundant collections show that this genus grows in Labrador, but it is not definitely known on the south shore. As Bryant skirted the coast as far east as Château bay, and as Storer went as far as Red bay, we may assume that each found the plant during the last part of his trip.

[*Kalmia latifolia* L.] Recorded by W. A. Stearns (S¹), "Of this plant Mr. Butler writes me: 'I have found it in ravines and near ponds in the interior, up Salmon river, and on Esquimaux island'" If the plant in question is a *Kalmia*, it is undoubtedly *K. angustifolia*.

Kalmia angustifolia L. Tundra, bogs, or thickets on hillsides, common as far east as Bonne-Espérance, Seven Islands C. B. Robinson, No. 769 (H). Mingan seigniory Mingan, C. W. Townsend (H). Lagorgendière. Romaine, tundra, C. No. 90,652. Archipel de Kécarpoui. île du Petit Rigolet, turfey hillside, C. No. 90,651.

K. polifolia Wang. Bogs, tundra, and wet thickets, abundant throughout. Lagorgendière Romaine, tundra, C. No. 90,653. Also collected by C. W. Townsend, C. B. Robinson, J. A. Allen, Dr. Storer, and D. N. Saint-Cyr

[*K. glauca* Ait.] *K. polifolia*.

[*Cassiope tetragona* Don.] Erroneously reported by J. Macoun (M) as collected by S. R. Butler on Caribou island. Neither Butler (B^s) nor W. A. Stearns (S¹) lists the species

[*Andromeda polifolia* L.] All records can be considered as *A. glaucophylla*.

Andromeda glaucophylla Link. Tundra, bogs, and wet thickets, very common throughout Southern Labrador Storer (H) Mingan seigniory. Mingan, C. W. Townsend (H); Pointe-aux-Esquimaux, open bog, C. No. 90,655, and C. W. Townsend (H), Watshishu, D. N. Saint-Cyr (called *A. polifolia*) (Q)

Chamædaphne calyculata (L.) Moench. Tundra and wet thickets, very common throughout. Mingan islands Eskimo island, C. W. Townsend (H) Mingan seigniory Pointe-aux-Esquimaux, tundra, C. No. 90,656. Natashkwan C. W. Townsend (H).

[*Cassandra calyculata* L.] *Chamædaphne calyculata*.

Arctostaphylos Uva-ursi (L.) Spreng. Mingan seigniory: Pointe-aux-Esquimaux, C. W. Townsend (H) Mingan islands. presumably from île du Havre, D. N. Saint-Cyr (Q); Eskimo island, limestone sea-cliffs, C. No. 90,657. Recorded by Verrill, but his plant is the var. *coactilis*.

A. Uva-ursi, var. *coactilis* Fernald and Macbride. Mingan seigniory. Pointe-aux-Esquimaux, C. W. Townsend (H) Mingan islands: Verrill, Hyatt, and Shaler (called *A. Uva-ursi*) (Y), île Ste Geneviève, top of limestone shingle, C. No. 90,658.

A. Uva-ursi, var. *adenotricha* Fernald and Macbride. Seven Islands C. B. Robinson, No. 732 (called *A. Uva-ursi*) (C and H). Mingan seigniory. Mingan, C. W. Townsend (called *A. Uva-ursi*) (H).

A. alpina (L.) Spreng Exposed rocky and turfy headlands or hillsides, generally distributed. Mingan seigniory: Pointe-aux-Esquimaux, C. W. Townsend (H). Archipel Ouapitagone: Romaine, rocky crests, C. No. 90,659. Gros Mécatina: D. N. Saint-Cyr. Reported by J. B. A. Ferland (F¹), and J. Richardson (R¹).

A. rubra (Rehder and Wilson) Fernald Mingan islands: Eskimo island, limestone sea-cliffs, C. No. 90,660.

Chroogenes hispidula (L.) T and G Thickets and mossy woods, common throughout. Mingan island D. N. Saint-Cyr (Q). Mingan seigniory: Pointe-aux-Esquimaux, C. W. Townsend (H). Lagorgendière: Romaine, mossy woods, C. No. 90,661

Vaccinium canadense Kalm Mingan seigniory: Pointe-aux-Esquimaux, C. W. Townsend (H). Reported by D. N. Saint-Cyr, as from Watshishu, July 6, 1882. Specimen not seen

V. pennsylvanicum Lam. Open places, or borders of woods, very common throughout. Lagorgendière Romaine, tundra, C. No. 90,662. Also collected by C. B. Robinson, C. W. Townsend, D. N. Saint-Cyr, and Verrill, Hyatt, and Shaler. Reported by J. B. A. Ferland (B¹), and J. Richardson (R¹)

V. pennsylvanicum, var. *myrtilloides* (Michx.) Fernald. Natashkwan C. W. Townsend (H).

V. pennsylvanicum, var. *angustifolium* (Ait.) Gray. Dry open places, common throughout Natashkwan sand dunes, C. Nos. 90,664 and 90,665.

[*V. corymbosum* L.] Recorded from Mingan islands by Verrill (V¹). Specimen not seen, a doubtful record.

V. uliginosum L. Turfy slopes, very common throughout. Mingan seigniory. Watshishu, D. N. Saint-Cyr (Q) Natashkwan: sand dunes, C. No. 90,667 Lagorgendière Romaine, rocky crest, C. No. 90,666. Recorded by Verrill (V¹), but the plant is of the var. *pubescens*.

V. uliginosum, var. *pubescens* Lange. Common throughout. Seven Islands. C. B. Robinson, No. 690 (H). Mingan islands Verrill, Hyatt, and Shaler (called *V. uliginosum*) (Y). Mingan seigniory Pointe-aux-Esquimaux, limestone, rocky headland, C. No. 90,668

[*V. caespitosum* Michx.] Recorded by S. R. Butler (B⁵). The plant is probably *V. uliginosum*.

[*V. ovalifolium* Sm.] of C. B. Robinson (R²) is *Lonicera caerulea*, var. *calvescens*

[*V. Vitis-Idæa* L.] All records belong with the var. *minus*.

V. Vitis-Idæa L., var. *minus* Lodd Rocky or turfy hillsides, very common throughout. Mingan seigniory: Pointe-aux-Esquimaux, C. W. Townsend (H). Mingan islands: Verrill, Hyatt, and Shaler (Y). Natashkwan: sand dunes, C. No. 90,669.

V. Oxycoccus L. Tundra and bogs, common throughout. Mingan seigniory: Mingan, D. N. Saint-Cyr (Q). Ile Ouapitagone: tundra, C. No. 90,670. Reported by S. R. Butler (B⁵), L. O. Brunet (B¹), and J. Richardson (R¹).

DIAPENSIACEÆ (DIAPENSIA FAMILY)

Diapensia lapponica L. Rocky summits and turfey hillsides in the Laurentian area, common on the eastern half of the coast. Seven Islands: C. B. Robinson, No. 941 (H). Pontchartrain: Vieux-Fort, rocky summit, C. No. 90,673. In Dr. Wm. Kelly's manuscript list.

PLUMBAGINACEÆ (LEADWORT FAMILY)

Limonium trichogonum S. F. Blake. Southern Labrador: Storer (H). This record may be open to some question, as Storer collected some specimens at the gut of Canso, and these are in no way distinguished from those obtained in Labrador. In spite of its conspicuous nature, no other botanist has succeeded in detecting it in this region. However, a single collection from Newfoundland (see *Rhodora*, XVI, 62, 1916) gives colour to this record of Storer's.

[*Armeria vulgaris* Willd.] In Macoun's Cat. Can., Pl i, 564 (1886) this species is reported from "Mingan islands, and on Grand Mécatina island, gulf of St Lawrence (St. Cyr)." Saint-Cyr does not list this species in either of his two publications cited here, consequently, for want of confirmation, this record is discredited.

PRIMULACEÆ (PRIMROSE FAMILY)

Primula farinosa L. Archipel du Vieux-Fort: Bonne-Espérance, J. A. Allen (Hb. Conn. Agric. Exp. Sta., New Haven). All the other records for this species belong to one of its varieties.

Primula farinosa L., var. *macropoda* Fernald. Calcareous ledges, or turfey slopes of outer islands. Southern Labrador: Storer (H); Dr. Bryant (H). Mingan seigniory: Pointe-aux-Esquimaux, rocky limestone headland, C. No. 90,674.

P. farinosa, var. *incana* (M. E. Jones) Fernald. Ledges and turfey slopes of the headlands and outer islands. Mingan seigniory: Mingan, C. W. Townsend (H). Mingan islands: Eskimo island, C. W. Townsend (H). Goyinish. Îles Boisées de cap Blanc, Washtawouka, rocky shore, C. No. 90,675.

P. mistassinica Michx. Infrequent. Mingan seigniory. Pointe-aux-Esquimaux, swampy brookside, C. No. 90,676, and C. W. Townsend (H). Mingan islands: D. N. Saint-Cyr (Q). Reported by S. R. Butler (B⁵) from archipel du Vieux-Fort: Fox island, near île de la Demoiselle. In Dr. Wm. Kelly's manuscript list.

P. egallicensis Wormskj. ex Lehman. Charnay: pointe au Maurier, mossy bank on island off, C. No. 90,677. This seems to be the first record for the plant south of cape St. Charles, on the Labrador coast.

Androsace septentrionalis L. Mingan islands: île Ste. Geneviève, D. N. Saint-Cyr (Q). In Dr. Wm. Kelly's manuscript list.

A. septentrionalis L., var. *robusta* St. John. Mingan islands: Eskimo island, limestone sea-cliff, C. No. 90,815, île Ste. Geneviève, top of limestone shingle. C. No. 90,814.

[*A. occidentalis* Pursh] of D. N. Saint-Cyr is *A. septentrionalis* L.

Lysimachia terrestris (L.) BSP. Rare. Mingan, and Charnay : rivière Etamamiou, grassy bank, C. No. 90,678.

Trientalis borealis Raf. Mossy woods and turfy hillsides, extremely abundant throughout. Mingan seigniory: Watshishu, D. N. Saint-Cyr (Q). Natashkwan river C. W. Townsend (H). Lagorgendière: Romaine, mossy woods, C. No. 90,679. Recorded by S. R. Butler (B⁴).

[*Glauz maritima* L.] of D. N. Saint-Cyr is the var. *obtusifolia*.

Glauz maritima L., var. *obtusifolia* Fernald. Saline marshes, occasional as far east as pointe au Maurier. Seven Islands: C. B. Robinson, No. 924 (C and H). Mingan seigniory: Watshishu, D. N. Saint-Cyr (Q). Natashkwan river: C. W. Townsend (H). Charnay: pointe au Maurier, gravelly shore, C. No. 90,680

OLEACEÆ (OLIVE FAMILY)

[*Fraxinus sambucifolia* Lam] Indicated by R. Bell (B⁴) as growing throughout the southern part of Saguenay co. There seems to be no evidence to support this

GENTIANACEÆ (GENTIAN FAMILY)

Gentiana nesophila Holm Mingan islands île à la Chasse, rocky limestone seashore, C. No. 90,681. *G. crinita* of Dr. Wm Kelly's manuscript list is undoubtedly of this species

G. Amarella L. Rocky, sandy, or turfy slopes, abundant in the calcareous region of Mingan islands and the strait of Belle Isle. Mingan seigniory: Pointe-aux-Esquimaux, mossy limestone rocks, C. No. 90,684. Mingan islands. île Ste. Geneviève, top of limestone shingle, C. No. 90,683. Brest anse des Dunes, grassy hollow, C. No. 90,682.

Reported by S. R. Butler (B⁵) from archipel du Vieux-Fort. île de la Demoiselle

[*G. acuta* Michx.] *G. Amarella*

G. propinqua Richards. Credited in Macoun. Cat. Can. Pl. i, 322 (1884) to "On hillsides at Amour and lowlands at Bonne-Espérance, Labrador (W. A. Stearns). Labrador. (Gray.)" This latter reference is based on a plant of S. R. Butler's from Forteau bay, which seems to be correctly identified. The former sheet is presumably in the U.S. National herbarium, but when the writer tried to borrow this sheet it could not be found. The existence of Butler's plant from Forteau bay, which is only 30 miles from Bonne-Espérance, gives colour to Stearn's record from the southern shore of the peninsula. Hence, with little question, this species is included in the list.

Lomatogonium rotatum (L.) Fries, f. *americanum* (Griseb.) Fernald. Sandy or turfy shores, all along the coast. Southern Labrador: Storer (H). Charnay: pointe au Maurier, turfy edge of sand beach, C. No. 90,685. Archipel de Kécarpoui îles Affligées, turfy shore, C. No. 90,686. Brest: Blanc-Sablon, brackish shore, M. L. Fernald and K. M. Wiegand, Nos. 3,906 and 3,907 (H). Reported by S. R. Butler (B⁵), and L. O. Brunet (B¹).

[*Pleurogyne rotata* (L.) Griseb] All records are to be considered as *Lomatogonium rotatum*, f. *americanum*.

Halima deflexa (Sm.) Griseb. Turfy shores and hillsides near the sea, very common all along the coast. Ile Kécarpoui: turfy shore, C. No. 90,687. Also collected by C. W. Townsend, Storer, D. N. Saint-Cyr, and Fernald and Wiegand.

Menyanthes trifoliata L. Marshes, bogs, and borders of ponds, very common throughout Mingan islands: D. N. Saint-Cyr (Q). Archipel Washicoutai: Ile Triple, edge of pool in rocks, C. No. 90,689.

BORAGINACEÆ (BORAGE FAMILY)

Mertensia maritima (L.) S. F. Gray. Gravel beaches, all along the shore. Seven Islands: C. B. Robinson, No. 730 (H). Mingan seigniory: Mingan, C. W. Townsend (H). Archipel du Vieux-Fort: Ile Herbée, gravel beach, C. No. 90,691.

LABIATÆ (MINT FAMILY)

Scutellaria galericulata L. Infrequent. Mingan islands: Ile à l'Ancre, limestone shingle, C. No. 90,694. Boishébert. Tabatière, meadow, C. No. 90,693. In Dr. Wm. Kelly's manuscript list.

GALEOPSIS TETRAHIT L. Introduced Chevalier: St. Paul, grassy shore, C. No. 90,695. A collection from Mingan: C. W. Townsend (H) is very young and might equally well be var. *bifida*.

G. TETRAHIT, var. *BIFIDA* (Boenn.) Lej. and Cout. Introduced at many stations. Boishébert. Tabatière, dooryard, C. No. 90,696.

Lycopus uniflorus Michx. Infrequent. Seven Islands: C. B. Robinson, No. 914 (H). Natashkwan wet dune hollow, C. No. 90,698. Char-nay. rivière Etamamiou, swale, C. No. 90,697.

SCROPHULARIACEÆ (FIGWORT FAMILY)

[*Chelone glabra* L.] Reported from Mingan islands: Eskimo island, D. N. Saint-Cyr, July 27, 1882. Specimen not seen.

Limosella aquatica L. Archipel Ouapitagon. Ile du Havre, Romaine, wet mud, C. No. 90,699. Anse portage, and Brest: anse des Dunes, sandy pond shore, C. No. 90,700. Archipel du Vieux-Fort: Bonne-Espérance, hollows of rocks filled with fresh water, J. A. Allen (Hb. Conn. Agric. Exp. Sta., New Haven). Found at Square islands on the eastern coast of Labrador by J. A. Allen, the nearest station being York Factory, Hudson bay, and from there it is general to the west and south. The var. *tenuifolia* is not known from the area.

Veronica scutellata L. Natashkwan: wet dune hollow, C. No. 90,701.

V. SERPYLLIFOLIA L. Introduced. Mingan seigniory. Pointe-aux-Esquimaux, rocky limestone headland, C. No. 90,702.

V. humifusa Dickson. Deep mossy woods, occasional. Southern Labrador: Dr. Bryant (H). Lagorgendière. Romaine, wooded river-bank, C. No. 90,703. Brest. Jones point, brookside, C. No. 90,704.

Melampyrum lineare Lam. Dry thickets and dry turfy hillsides, occasional. Seven Islands: C. B. Robinson, No. 838 (H). Natashkwan river: C. W. Townsend (H). Brouague. Petite rivière Coxipi, dry, mossy hillside, C. No. 90,705. Archipel de St. Augustin: Bayfield island, sunny, mossy bank, C. No. 90,706.

Euphrasia purpurea Reeks. Occasional. Natashkwan; and Lagorgendière: Romaine, turfy bank, C. No. 90,711. Charnay: pointe au Maurier, edge of brackish marsh, C. No. 90,710.

E. purpurea, f. *candida* Fernald and Wiegand. Seven Islands: east side of Grande Basque, on anorthosite, C. B. Robinson, No. 943 (C and H).

E. purpurea, var. *Farlowii* (Robinson) Fernald and Wiegand. Archipel du Petit-Mécatina: îles Netagamou, grassy ledge, C. Nos. 90,712 and 90,713.

E. purpurea, var. *Randu* (Robinson) Fernald and Wiegand. Reported from Seven Islands by C. B. Robinson (R²) (called *E. Randu*). Specimen not seen.

[*E. Randu* Robinson.] *E. purpurea*, var. *Randu*.

E. disjuncta Fernald and Wiegand. Turfy hillsides, common. Brest: Jones point, grassy shore, C. No. 90,714. Also collected by J. A. Allen, Storer, and Fernald and Wiegand.

E. arctica Lange. Archipel du Petit-Mécatina: îles Netagamou grassy ledge, C. No. 90,717.

E. stricta Host, var. *tatarica* (Fischer) Fernald and Wiegand. Mingan seigniorie: Betchouane, grassy shore, C. No. 90,719. Natashkwan: grassy shore, C. No. 90,718.

[*E. canadensis* Townsend] Recorded from Mingan islands by D. N. Saint-Cyr. In the collection (Q) there is a cover of *Euphrasia* labelled Quebec, July, 1883, and Mingan island, July 30, 1882. Within are two sheets, on one is a loose ticket saying Citadelle Quebec, Tout l'été, and île d'Orléans, August 28, 1883. The other is a sheet of *E. canadensis* without data, but presumably from Mingan islands.

[*E. officinalis* L.] of D. N. Saint-Cyr is *E. canadensis*. Reported by S. R. Butler (B⁵), and L. O. Brunet (B¹). It is impossible to say without an examination what these may be.

Rhinanthus. The North American species are so imperfectly understood, and the specimens in drying lose so many of their characters, that no attempt has been made to correlate the various published records when the actual specimens have not been examined.

[*R. Crista-galli* L.] A specimen from Seven Islands: C. B. Robinson, is so labelled. Reported by S. R. Butler (B⁵).

R. oblongifolius Fernald. A collection by Storer is so named.

R. Kyrollæ Chabert. Grassy shores and turfy hillsides, common throughout. Lagorgendière: Romaine, grassy shore, C. No. 90,709. Archipel de St. Augustin: Bayfield island, grass covered dunes, C. No. 90,708. Pontchartrain: Vieux-Fort, grassy shore, C. No. 90,707.

LENTIBULARIACEÆ (BLADDERWORT FAMILY)

Utricularia vulgaris L., var. *americana* Gray. Shallow ponds and streams, in the calcareous region of Mingan islands, and strait of Belle Isle. Pointe-aux-Esquimaux: île à la Chasse; and Brest: rivière Blanc-Sablon, shallow sandy-bottomed pools, M. L. Fernald and K. M. Wiegand, No. 4,006 and C. No. 90,720.

U. minor L. Lagorgendière: Romaine, pool in tundra, C. No. 90,721. Brest: Blanc-Sablon, springy holes in bogs, on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 4,007. "

U. intermedia Hayne. Pointe-aux-Esquimaux; and Mingan islands: île à la Chasse, shallow pool, C. No. 90,722.

U. cornuta Michx. Mingan seigniory: Mingan, and Pointe-aux-Esquimaux, edge of pool in tundra, C. No. 90,723.

Pinguicula vulgaris L. Abundant on the limy ledges of Mingan islands and strait of Belle Isle, and occasional on the turfy slopes of the outer islands in the Laurentian area. Southern Labrador: Storer (H). Mingan islands: Verrill, Hyatt, and Shaler (Y); Eskimo island, wet limestone sea-cliffs, C. No. 90,728 and 90,729. Archipel Ouapitagon: île Matchiatik, cleft in rocks, C. No. 90,724. Charnay: pointe au Maurier, mossy bank on island off, C. No. 90,725. Île Kécarpoui: turfy hillside, C. No. 90,726. Brest: Longue pointe, turfy edge of pond, C. No. 90,727. Reported by D. N. Saint-Cyr, and S. R. Butler (B⁴).

P. alpina L. W. A. Stearns writes (S¹), "In a letter Mr. Butler says: 'There is a *Pinguicula* which you have omitted, and I believe *stricta* was the specific name, a low, white-flowered species; it grew both at Bonne-Espérance and the neighbouring islands and Forteau.' I did not find it, and it was omitted from his list." The plant is evidently *P. alpina*. There seems to be only one other record of this species from North America, Gray, Synopt. Fl. N. Am., II, pt. I, 317 (1886), which is discredited in Britton and Brown, Ill. Fl., III, 226 (1913). The specimen is in the Gray herbarium and is marked, "In Hb. Durand, as from Le Conte to Collins, Labrador (coll. Steinhauer)."

PLANTAGINACEÆ (PLANTAIN FAMILY)

PLANTAGO MAJOR L. Introduced. Mingan seigniory: Pointe-aux-Esquimaux, roadside, C. No. 90,730. Recorded by Verrill (V¹) from Mingan islands, July 10, 1861.

P. decipiens Barneoud. Saline shores, very common throughout. Archipel de St. Augustin: île des Genévriers, rocky beach, C. No. 90,731. Also collected by D. N. Saint-Cyr, Storer, J. A. Allen, C. B. Robinson, C. W. Townsend, and Verrill, Hyatt, and Shaler.

[*P. maritima* L.] *P. decipiens*.

[*P. pauciflora* Pursh.] *P. decipiens*.

RUBIACEÆ (MADDER FAMILY)

Galium palustre L. Mingan islands: Eskimo island, D. N. Saint-Cyr (called *G. pusillum*) (Q).

[*G. pusillum* Gray] of D. N. Saint-Cyr is *G. palustre*.

[*G. trifidum* L., var. *pusillum* Gray.] Recorded by S. R. Butler (B⁴), Miss Macfarlane, No. 25. The plant is probably *G. palustre*.

G. trifidum L., var. *halophilum* Fernald and Wiegand. Brackish shores, apparently throughout. Archipel Washicoutai: île Triple, wet sod, C. No. 90,333. Charnay: rivière Etamamiou, brackish marsh, C. No. 90,332. Brest: Blanc-Sablon, brackish shore, M. L. Fernald and K. M. Wiegand, No. 4,035 (H).

G. Claytoni Michx. Natashkwan: edge of slough in sand dunes, C. No. 90,734.

G. labradoricum Wiegand. Natashkwan river: C. W. Townsend (H). Archipel de St. Augustin: Bayfield island, edge of thicket, C. No. 90,735. Brest: Blanc-Sablon, in wet sand on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 4,045 (H). Southern Labrador: Storer (H).

G. triflorum Michx. Boishébert: baie des Moutons, grassy hillside, C. No. 90,736. St. Augustin river: alder thicket, C. No. 90,737. In Dr. Wm. Kelly's manuscript list.

CAPRIFOLIACEÆ (HONEYSUCKLE FAMILY)

Diervilla Lonicera Mill. Seven Islands: C. B. Robinson, No. 890 (C and H).

[*Lonicera cærulea* L.] All records belong with the var. *villosa*.

Lonicera cærulea L., var. *villosa* (Michx.) T. and G. Wet thickets or turfy hillsides, common throughout. Mingan seigniory: Mingan, and Pointe-aux-Esquimaux, C. W. Townsend (H). Mingan islands: île du Havre, D. N. Saint-Cyr (called *L. cærulea*) (Q). Lagorgendière: Romaine, grassy shore, C. No. 90,738. Brest: Blanc-Sablon, in dry or wet places on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 4,054 (H).

L. cærulea, var. *calvescens* Fernald and Wiegand. Seven Islands: C. B. Robinson, No. 688 (called *Vaccinium ovalifolium*) (H).

L. canadensis Marsh. Recorded from Mingan islands: île du Havre, July 25, 1882. D. N. Saint-Cyr (as *L. ciliata*). Specimen not seen, but is probably all right.

[*L. ciliata* Muhl.] For record of D. N. Saint-Cyr see *L. canadensis*.

[*Linnæa borealis* Gronov.] All records belong with the var. *americana*.

Linnæa borealis L., var. *americana* (Forbes) Rehder. Woods or sunny banks, extremely abundant throughout. St. Augustin river: mossy evergreen woods, C. No. 90,740. Also collected by C. W. Townsend, C. B. Robinson, and Storer. Reported by D. N. Saint-Cyr, J. Richardson (R¹), S. R. Butler (B⁴), and Verrill (V¹).

Viburnum pauciflorum Raf. Thickets and borders of woods, generally distributed, but especially common and luxuriant in the calcareous region of Mingan islands and strait of Belle Isle. Southern Labrador: Dr. Bryant (H). Mingan seigniory: Mingan river, D. N. Saint-Cyr (Q); Mingan, C. W. Townsend (H). Mingan islands: Verrill, Hyatt, and Shaler (Y); Eskimo island, wooded bank, C. No. 90,742; île Ste. Geneviève, edge of woods, C. No. 90,741. Lagorgendière: Romaine, wooded bottomland C. No. 90,743.

V. cassinoides L. Mingan seigniory. granite hills back of Mingan, C. No. 90,744. Natashkwan river: C. W. Townsend (H).

CAMPANULACEÆ (BLUEBELL FAMILY)

Campanula rotundifolia L. Rocky or turfy shores and hilltops, common, especially near the coast. Southern Labrador: Storer (H). Seven Islands: C. B. Robinson (H). Natashkwan river: C. W. Townsend (H). Boishébert: Tabatière, rocky shore, C. No. 90,747.

[*C. linifolia* Lam.] *C. rotundifolia*.

Lobelia Dortmanna L. Brouague: Petite rivière Coxipi, in 1 foot of water, sandy-bottomed pond. C. No. 90,748. Also at Brest.

COMPOSITÆ (COMPOSITE FAMILY)

Eupatorium purpureum L., var. *maculatum* (L.) Darl. Mingan seigniory: Mingan river, sand bar in, C. No. 90,749.

[*Solidago squarrosa* Muhl.] of D. N. Saint-Cyr is *S. rugosa* var. *villosa*.

Solidago hispida Muhl. Mingan islands: île Ste. Geneviève, limestone sea-cliffs, C. No. 90,750.

S. macrophylla Pursh. Thickets and borders of woods, common throughout. Southern Labrador: Storer (H). Seven Islands C. B. Robinson, No. 780 (H and C). Brouague: Shekatika river, rocky isle in, C. No. 90,752. Pontchartrain: Vieux-Fort, edge of thicket on hillside, C. No. 90,751.

S. macrophylla, var. *thyrsoides* (Mey.) Fernald Probably common throughout. Archipel de Kécarpou: île du Petit Rigolet, edge of thicket, C. No. 90,753. Archipel du Blanc-Sablon: Greenly island, J. A. Allen (Hb. Conn. Agric. Exp. Sta., New Haven).

S. humilis Pursh (*S. uliginosa* Nutt.) Tundra and bogs, probably common throughout. Mingan islands: île Ste. Geneviève, open bog, C. No. 90,755. Natashkwan: Little Natashkwan river, boggy shore, C. No. 90,754.

S. rugosa Mill., var. *villosa* (Pursh) Fernald Mingan seigniory: rivière au Tonnerre, D. N. Saint-Cyr (called *S. squarrosa*) (Q).

S. lepida DC., var. *elongata* (Nutt.) Fernald St. Augustin river thicket on sandy isle in river, C. No. 90,756.

S. graminifolia (L.) Salisb. Mingan seigniory: sand bar in Mingan river, C. No. 90,757.

[*Aster radula* Ait.] Recorded by S. R. Butler (B⁵). The plant is probably of the var. *strictus*.

Aster radula Ait., var. *strictus* (Pursh) Gray Turfy hillsides, occasional throughout. Southern Labrador: Storer (H). Boishébert: baie des Moutons, turfy hillside, C. Nos. 90,758 and 90,759. Brest: Blanc-Sablon, dry thicket, C. No. 90,760.

A. foliaceus Lindl. Shores and hillsides, common throughout. Southern Labrador: Storer (H). Archipel du Petit-Mécatina: îles Neta-gamiou, rocky shore, C. No. 90,762. Boishébert: Tabatière, rocky shore, C. No. 90,761. Archipel de Kécarpou: île de Petit Rigolet, grassy shore, C. No. 90,763. St. Augustin river: sandy isle in river, C. No. 90,764.

A. puniceus L., var. *firmus* (Nees) T. and G. Mingan seigniory: Sheldrake river, D. N. Saint-Cyr (Q).

A. puniceus, var. *oligocephalus* Fernald Île Gros-Mécatina: thicket on hillside, C. No. 90,766.

A. umbellatus Mill. Turfy slopes, occasional as far east as île Tête à la Baleine. Southern Labrador: Storer (H). Mingan seigniory: Sheldrake river, D. N. Saint-Cyr (Q). Natashkwan river: C. W. Townsend (H). Pointe au Maurier, and archipel du Gros-Mécatina: île Tête à la Baleine, turfy brookside, C. No. 90,767.

A. acuminatus Michx. Southern Labrador: Storer (H).

A. nemoralis Ait. Occasional on the tundra as far east as île Tête à la Baleine. Mingan seigniory: Sheldrake, D. N. Saint-Cyr (Q). Natashkwan river. C. W. Townsend (H). Pointe au Maurier Archipel du Gros-Mécatina: île Tête à la Baleine, turfy brookside, C. No. 90,767.

[*Antennaria alpina* Gaertn.] Erroneously recorded by J. Macoun (M) as collected on Caribou island by S. R. Butler. Neither Butler (B⁹) nor W. A. Stearns (S¹) list the species

A. spathulata Fernald, var. *continentis* Fernald and St. John. Natashkwan. sand dunes, C. No. 90,768.

A. glabrifolia Fernald Natashkwan sand dunes, C. No. 90,769.

Anaphalis margaritacea (L.) Benth. and Hook., var. *subalpina* Gray. Mingan islands: île Ste Geneviève, grassy clearing, C No 90,770.

A. margaritacea, var. *occidentalis* Greene Observed on Mingan islands.

GNAPHALIUM ULIGINOSUM L Introduced. Natashkwan track in sand dunes, C. No. 90,771

ACHILLEA MILLEFOLIUM L. Introduced. Mingan seigniory· Mingan, D. N. Saint-Cyr (Q)

A. Millefolium, var. *nigrescens* E. Mey. Grassy or rocky shores, common throughout Seven Islands C. B. Robinson, No 810 (H). Mingan islands. île à la Chasse, rocky limestone shore, C. No. 90,772. Natashkwan river. 70 miles up from mouth, C W. Townsend (H). Brest: Blanc-Sablon, abundant in damp sand on the gneiss plain, M. L Fernald and K M Wiegand, No. 4,156 (H)

TANACETUM VULGARE L. Mingan seigniory· Pointe-aux-Esquimaux, and grassy clearing, Betchouane, C. No 90,774

Artemisia canadensis Michx. Mingan seigniory. Mingan river, sand flat in, C No 90,775. Natashkwan river C. W. Townsend (H)

Petasites palmata (Ait) Gray Grassy banks, calcareous region of Mingan islands and strait of Belle Isle. Mingan seigniory Pointe-aux-Esquimaux, C W. Townsend (H); Betchouane, meadow, C. No. 90,776. Brest· Blanc-Sablon, wet, mossy places, limestone and calcareous sandstone terraces, M. L. Fernald and K. M. Wiegand, No 4,168 (H).

SENECIO VULGARIS L. Introduced. Seven Islands: C B Robinson No. 803 (H). Mingan seigniory: Sheldrake river, D. N. Saint-Cyr (Q). Boishébert: baie des Moutons, rocky shore near a wharf, C. No. 90,777.

S. palustris (L.) Hook. Wet shores of outer islands and headlands. Pointe au Maurier; îles Netagamiou; and archipel de Kécarpoui îles Affligées, rocky shore, C. No. 90,778.

S. pauciflorus Pursh. Brest· Jones point, little swales near summit of limy ridge, C. No. 90,779.

S. aureus L., var.? Mingan seigniory: Betchouane, meadow, C. No. 90,780. This is the variant of *S. aureus* that is characteristic of the calcareous regions bordering the gulf of St. Lawrence.

[*S. aureus*, var. *Balsamitæ* Gray.] Recorded by S. R. Butler (B⁹). The plant in question is probably *S. pauperculus*.

S. pauperculus Michx. Rocky shores and meadows in the calcareous region of Mingan islands and strait of Belle Isle. Mingan seigniory: Betchouane, rocky limestone shore, C. No. 90,782. Brest: anse des Dunes, grassy hollow, C. No. 90,781.

S. Pseudo-Arnica Less. Saline shores, very common all along the coast. Seven Islands: C. B. Robinson, No. 793 (H). Mingan islands: Île du Havre, D. N. Saint-Cyr (Q). Archipel du Gros-Mécatina: Île Tête à la Baleine, grassy dune, C. No. 90,783.

Cirsium muticum Michx. Brest: rivière Blanc-Sablon, thicket by, C. No. 90,786.

C. muticum, var. *monticola* Fernald. Mingan islands: Île Ste. Geneviève, boggy woods, C. No. 90,787. This collection is treated as var. *monticola* because of the congestion of the inflorescence, in spite of the fact that the involucre is cobwebby.

C. ARVENSE (L.) Scop. Introduced. Mingan seigniory: Pointe-aux-Esquimaux, and grassy clearing, Betchouane, C. No. 90,785.

LEONTODON AUTUMNALIS L. Introduced at several places. Mingan seigniory: rivière au Tonnerre, D. N. Saint-Cyr (Q). Natashkwan, grassy shore, C. No. 90,788.

TARAXACUM OFFICINALE Weber. Introduced at several places. Mingan seigniory: Pointe-aux-Esquimaux, C. W. Townsend (H); Watshishu, D. N. Saint-Cyr (called *T. dens-leonis*) (Q). Natashkwan: roadside, C. No. 90,789.

[*Taraxacum officinale* Weber, var. *alpinum* Koch.] Erroneously recorded by Macoun (M) as collected by S. R. Butler at Caribou island. Butler (B¹) does not list the plant.

[*T. dens-leonis* Desf.] *T. officinale*.

T. ceratophorum (Ledeb.) DC. Open slopes in the calcareous region of strait of Belle Isle. Archipel du Blanc-Sablon. Greenly island, J. A. Allen (Hb. Conn. Agric. Exp. Sta., New Haven). Brest: Jones point, and rivière à la Truite, grassy hillside, C. Nos. 90,790 and 90,791.

Lactuca spicata (Lam.) Hitchc. Legardeur: Coacoachou, grassy shore, C. No. 90,792.

Prenanthes racemosa Michx. Turfy shores, occasional as far east as Romaine. Seven Islands: C. B. Robinson, No. 784 (H). Île Ste. Geneviève; Île à la Chasse; Betchouane; and Lagorgendière: Romaine, rocky headland, C. No. 90,793. In Dr. Wm. Kelly's manuscript list.

P. nana (Bigel.) Torr. Turfy slopes, occasional. Southern Labrador: Storer (H). Betchouane; and Brest: rivière à la Truite, rocky hillside, C. No. 90,794; Blanc-Sablon, on the gneiss plain, M. L. Fernald and K. M. Wiegand, No. 4,224 (H).

Hieracium canadense Michx. Mingan seigniory: Betchouane, grassy shore, C. No. 90,795. Lagorgendière: Romaine, grassy bank, C. No. 90,796.

TABLE OF FAMILIES, SPECIES, VARIETIES, AND FORMS

Families	Native			Introduced			Total
	Species	Varieties	Forms	Species	Varieties	Forms	
<i>Polypodiaceæ</i> ..	14	1	0	0	0	0	15
<i>Usmundaceæ</i> . . .	2	0	0	0	0	0	2
<i>Opheoglossaceæ</i> ...	3	2	0	0	0	0	5
<i>Equisetaceæ</i>	4	6	0	0	0	0	10
<i>Lycopodiaceæ</i> . . .	6	7	0	0	0	0	13
<i>Selaginellaceæ</i> ..	2	0	0	0	0	0	2
<i>Isotiaceæ</i>	0	1	0	0	0	0	1
<i>Tazaceæ</i>	1	0	0	0	0	0	1
<i>Pinaceæ</i>	6	1	0	0	0	0	7
<i>Sparganaceæ</i> . . .	3	0	0	0	0	0	3
<i>Potamogetonaceæ</i> ...	9	8	0	0	0	0	17
<i>Juncaginaceæ</i> . . .	3	0	0	0	0	0	3
<i>Alismaceæ</i>	1	0	0	0	0	0	1
<i>Gramineæ</i>	36	16	1	5	0	0	58
<i>Cyperaceæ</i>	58	18	0	0	0	0	76
<i>Araceæ</i>	1	0	0	0	0	0	1
<i>Lemnaceæ</i>	1	0	0	0	0	0	1
<i>Erucaceæ</i>	1	0	0	0	0	0	1
<i>Juncaceæ</i>	10	6	0	1	0	0	17
<i>Liliaceæ</i>	9	0	0	1	0	0	10
<i>Iridaceæ</i>	2	1	0	0	0	0	3
<i>Orchidaceæ</i>	12	1	0	0	0	0	13
<i>Sabiaceæ</i>	17	2	1	0	0	0	20
<i>Myricaceæ</i>	1	0	0	0	0	0	1
<i>Betulaceæ</i>	6	5	1	0	0	0	12
<i>Urticaceæ</i>	2	0	0	0	0	0	2
<i>Santalaceæ</i>	2	0	0	0	0	0	2
<i>Polygonaceæ</i>	7	0	0	5	0	0	12
<i>Chenopodiaceæ</i> . .	2	2	0	1	0	0	5
<i>Caryophyllaceæ</i> . .	14	8	0	3	0	0	25
<i>Portulacaceæ</i> . . .	2	0	0	0	0	0	2
<i>Nymphaeaceæ</i> . . .	1	0	0	0	0	0	1
<i>Ranunculaceæ</i> . . .	11	2	2	2	1	0	18
<i>Fumariaceæ</i>	1	0	0	0	0	0	1
<i>Cruciferae</i>	15	3	0	4	0	0	22
<i>Sarracenaceæ</i> . . .	1	0	0	0	0	0	1
<i>Droseraceæ</i>	3	0	0	0	0	0	3
<i>Crassulaceæ</i>	2	0	0	0	0	0	2
<i>Saxifragaceæ</i> . . .	12	2	0	0	0	0	14
<i>Rosaceæ</i>	19	12	1	0	0	0	32
<i>Leguminosæ</i>	1	1	0	5	0	0	7
<i>Oxalidaceæ</i>	1	0	0	1	0	0	2
<i>Callitrichaceæ</i> . . .	3	0	0	0	0	0	3
<i>Empetraceæ</i>	3	0	0	0	0	0	3
<i>Aquifoliaceæ</i> . . .	1	0	0	0	0	0	1
<i>Aceraceæ</i>	1	0	0	0	0	0	1
<i>Balsaminaceæ</i> . . .	1	0	0	0	0	0	1
<i>Rhamnaceæ</i>	1	0	0	0	0	0	1
<i>Guttiferae</i>	2	0	0	0	0	0	2
<i>Cistaceæ</i>	0	1	0	0	0	0	1
<i>Violaceæ</i>	7	1	0	0	0	0	8
<i>Elæagnaceæ</i>	1	0	0	0	0	0	1
<i>Onagraceæ</i>	6	2	1	0	0	0	9
<i>Haloragidaceæ</i> . . .	2	1	0	0	0	0	3
<i>Araliaceæ</i>	2	0	0	0	0	0	2
<i>Umbelliferae</i>	5	0	0	0	0	0	5
<i>Cornaceæ</i>	3	0	0	0	0	0	3
<i>Brucaceæ</i>	20	8	0	0	0	0	28
<i>Diapensiaceæ</i>	1	0	0	0	0	0	1
<i>Plumbaginaceæ</i> . . .	1	0	0	0	0	0	1
<i>Primulaceæ</i>	6	4	0	0	0	0	10
<i>Gentianaceæ</i>	5	1	0	0	0	0	6

TABLE OF FAMILIES, SPECIES, VARIETIES, AND FORMS
—Concluded

Families	Native			Introduced			Total
	Species	Varieties	Forms	Species	Varieties	Forms	
<i>Boraginaceæ</i>	1	0	0	0	0	0	1
<i>Labiata</i>	2	0	0	1	1	0	4
<i>Scrophulariaceæ</i>	9	3	1	1	0	0	14
<i>Lentibulariaceæ</i>	5	1	0	0	0	0	6
<i>Plantaginaceæ</i>	1	0	0	1	0	0	2
<i>Rubiaceæ</i>	4	1	0	0	0	0	5
<i>Caprifoliaceæ</i>	4	3	0	0	0	0	7
<i>Campanulaceæ</i>	2	0	0	0	0	0	2
<i>Compositæ</i>	22	12	0	7	0	0	41
Total	424	142	8	38	2	0	614

Species and varieties recorded, but excluded—206.

BIBLIOGRAPHY

Audubon, John James —“The birds of America (1840-1844)” In a few of the plates that were drawn in Labrador, native plants are used as a background. These are well executed and recognizable, but are all common species.

Audubon, Maria R —“Audubon and his journals (1897)” Audubon's Labrador journal forms a part of this, and in it are numerous references to plants.

Bell, Robert —“The Labrador peninsula” *Scott Geogr Mag*, xi, 335-361 and map (1895). This is similar to (B³) but is more inclusive and the map shows greater detail. Pages 356-8 consider the distribution of the forest trees within the area. (B⁴)

Bell, Robert —“The northern limits of the principal forest trees of Canada east of the Rocky mountains,” *Geol. Surv., Can*, 38C-56C and map (1879-80). On the map of distribution the northern limits of the trees are indicated by a definite line. While representing various northern outposts of a species, Bell has assumed that a smooth line connecting these outposts represents the northern limits of that species. This method often means, however, that species will be credited to regions where they are not known to grow, and this seems to be particularly true of the region in question.

Billings, B., jun —See Richardson, James

Brunet, l'Abbé Louis Ovide —“Catalogue des Plantes Canadiennes, contenues dans l'herbier de l'Université Laval,” 1-64 (1865). This contains references to plants collected in the area, especially by Commandant Fortin. (B⁵.)

Brunet, L. O. —“Notes sur les Plantes, recueillis en 1858, par M. l'Abbé Ferland sur les côtes de Labrador, baignées par les eaux du Saint-Laurent,” 1-8. Quebec, 18—. This contains an annotated list of 23 species, in most cases found near Tabatière. (B¹.)

Bryant, Dr. Henry.—“Remarks on some of the birds that breed in the gulf of St Lawrence,” *Proc. Bost. Soc. Nat. Hist.*, viii, 65-75 (1861). This gives his itinerary on the coast from Romaine to Chateau Beau. He collected numerous specimens that are now in the Gray herbarium.

Butler, Rev. S. R.—“Labrador Plants,” *Canadian Nat.*, v, 350-3 (1870). This is an annotated list of plants collected in the neighbourhood of the strait of Belle Isle, published by D. A. Watt. “He collected neither pines, willows, nor glumaceous plants, and . . . his more obscure species were named for him by Prof. Eaton, of New Haven.” Several collections in the same region by a Miss Macfarlane are incorporated. The list contains 135 species of vascular plants. (B¹.)

Drummond, Andrew Thomas.—“How plant life is distributed in Canada and why,” *Trans. Can. Inst.*, viii, 23-39 (1905).

Ferland, l'Abbé Jean Baptiste Antoine.—“Le Labrador, notes et récits de voyage,” 1858? Pp 42-44 contain an account of the vegetation nearly identical with that in (B¹), with one additional species, *Amelanchier canadensis*. (F¹.)

Fernald, Merritt Lyndon.—“A botanical expedition to Newfoundland and southern Labrador,” *Rhodora*, xiii, 109-62 (1911). Prof. Fernald gives an account of his five days' botanizing at Blanc-Sablon. The characteristics of the place and the flora are described. He mentions 81 species, and he has allowed the use of an unpublished list of the species he collected there, 237 in all. These plants are now in the Gray herbarium. His companion, Prof. Wiegand, visited Blanc-Sablon in September and made further collections.

Fernald, M. L., and Sornborger, J. D.—“Some recent additions to the Labrador Flora,” *Ottawa Naturalist*, xii, 89-107 (1899). Although this is primarily a report on collections made on the eastern coast of Labrador, it includes notes on some of the plants collected along the north shore of the gulf by S. R. Butler, Dr. Storer, J. A. Allen, Martin, and Bryant.

James, Joseph F.—“The flora of Labrador,” *Science*, iii, 359 (1884). This is a short discussion of the phytogeography of the flora of Labrador, as represented by Stearn's list.

Lawson, George —“Monograph of Ranunculaceæ of the Dominion of Canada and the adjacent parts of British America,” *Proc. and Trans. Nova Scotia Inst. Nat. Sci.*, ii, 17-51 (1870). This contains occasional references to stations on the north shore of the gulf. (L¹.)

Low, Albert Peter —“Report on explorations in the Labrador peninsula,” *Geol. Surv., Can.*, viii (1895). Pages 30L-40L contain a discussion of the distribution of trees and other plants in northern Quebec.

Macoun, James Melville —“List of the plants known to occur on the coast and in the interior of the Labrador peninsula,” *Geol. Surv., Can., Ann. Rept.*, n. s., viii, App. vi, 353L-366L (1895). “The first column contains those species known to occur on the coast of Labrador. It has been copied from Dr. Packard's ‘The Labrador coast’ with the addition of a few species overlooked when his list was compiled, or which have since been collected.”

Macoun, John.—“Catalogue of the plants reported by various travelers as growing on the coast of Labrador,” Chap. xvi, pp. 448-474 in Packard, Alpheus Spring.—“The Labrador coast” (1891). The list given is principally of the plants of Labrador, but it contains the plants cited in the works of S. R. Butler, W. A. Stearns, and J. B. A. Brunet. (M.)

Macoun, John, and Gibson, John B.—“Synopsis of the flora of the valley of the St. Lawrence and the Great Lakes, with description of the rarer species,” Canadian Journal, xv, 51-66, 161-176, 249-264, 429-435, 546-556 (1876-7). This list included the plants cited by L. O. Brunet, A. E. Verrill, J. Richardson, and S. R. Butler.

Packard, Alpheus Spring.—“The Labrador coast,” 1-513 (1891). Chapter iv, “Life and Nature in southern Labrador”; this first appeared in Am. Naturalist, xix, 269-275, 365-372 (1885); and Chap. V, “One of fifty days in southern Labrador.” In these are mentioned 28 species, all very common plants, which were observed on Caribou island (Ile de la Demoiselle) or at Salmon bay (baie au Saumon). Chap. xvi, “The botany of the Labrador coast,” see Macoun, John.

Richardson, James (erroneously printed John).—“List of plants collected on the island of Anticosti and the coast of Labrador, in 1860,” Ann. Bot. Soc. Can., 1, 58-9 (1861). The 37 species cited were determined by B. Billings, jun. (R¹.)

Robinson, Charles Budd.—“Plant studies on the northern coast of the gulf of St. Lawrence,” Torreya, vii, 222-3 (1907). This short account in which 13 species are mentioned is all that Robinson published on a summer's collecting, with Seven Islands as a centre. (R².)

Saint-Cyr, Dominique Napoleon.—“List of plants gathered on the north shore, from St. Paul bay to Ouatchechou, and in the islands of Mingan, Anticosti, and Grand Mécatina, during the summer of 1882 and the month of July, 1885, during the leisure hours of his two trips to the lower St. Lawrence and the gulf.” Return (17 B) to an address of the Legislative Assembly, Dept. of Public Instruction, Quebec (April 19, 1886). Also a French edition. This little-known publication contains the most extensive list of plants from the north shore of the gulf. It credits some 227 species to the region, and is the most important of the various works cited here.

Saint-Cyr, D. N.—“Catalogue of plants in the Museum of the Dept. of Public Instruction, gathered by D. N. Saint-Cyr, up to 1885, or acquired by exchange or purchase.” It is bound with the preceding, and likewise there is a French edition.

Stearns, Winfrid Aldon.—“Notes on the natural history of Labrador,” Proc. U.S. Nat. Mus., vi, 126-37 (1883). This includes all the records given by S. R. Butler (B⁶) with additional ones bringing the total up to 157 species. (S.¹)

Townsend, Charles Wendell.—“A Labrador spring (1910).” This book contains frequent mention of vascular plants, the more conspicuous of those collected by the author in 1909, while cruising from Seven Islands to Natashkwan. Dr. Townsend has allowed the writer to study the list of these plants made by Prof. M. L. Fernald in determining them. The plants are in the Gray Herbarium.

Townsend, C. W.—“A short trip into the Labrador peninsula by way of the Natashquan river,” Bull. Geogr. Soc. Phila., xi, 170–82 (1913). This contains several references to the plants observed. Those collected are now in the Gray Herbarium.

Townsend, C. W., and Allen, Glover Morrill —“Birds of Labrador,” Proc. Bost. Soc. Nat. Hist., xxxiii, 277–428 (1907). This gives a general discussion of the exploration and the life zones of Labrador and New Quebec.

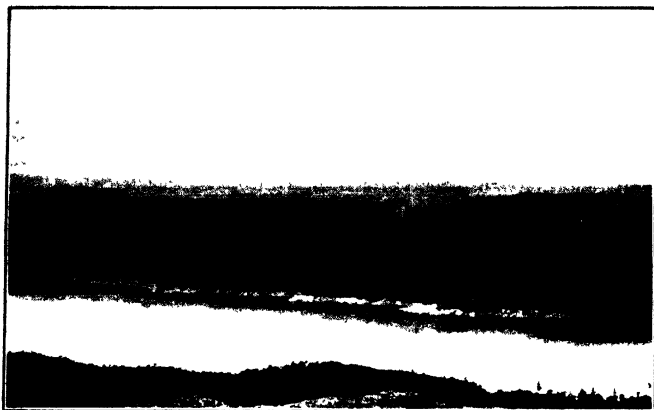
Verrill, Addison Emery.—“List of plants collected at Anticosti and the Mingan islands during the summer of 1861.” Proc. Bost. Soc. Nat. Hist., ix, 146–52 (1862). The party, consisting of A. E. Verrill, Alpheus Hyatt, and Nathaniel Southgate Shaler, were at Mingan islands from July 4–8, 1861. This list only partly indicates the localities where the various species were collected. By a study of Verrill’s collection which is now in the Eaton Herbarium it appears that 48 species were collected on Mingan islands. (V¹).

Uebe, Richard.—“Labrador, Eine Physiographische und Kulturge-schichtliche Skizze.” Gebauer-Schwetschke, G. m. b. H., Halle a. S. (1909). Pp. 64–69 treat Die wichtigsten Vegetationsgrenzen. This is a compilation of material from A. P. Low, and R. Bell (B⁴). It contains tables of meteorological observations.

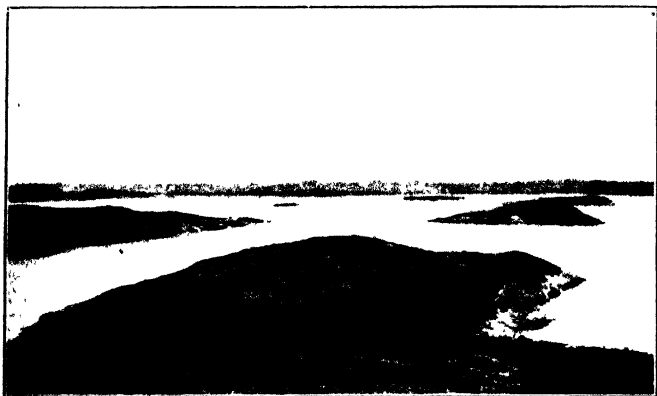
Watt, D. A.—See Butler, Rev. S. R.

LIST OF NEW SPECIES AND VARIETIES

	PAGE
<i>Equisetum palustre</i> L, var. nigridens n. var.	58
<i>Alopecurus aristulatus</i> Michx, var. Merriami (Beal) n comb	63
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A. View over Romaine (or Olomonashibou) river to the elevated tundra beyond



B Islands in Darby bay, near pointe au Maurier, typical of those in the Laurentian area

PLATE III



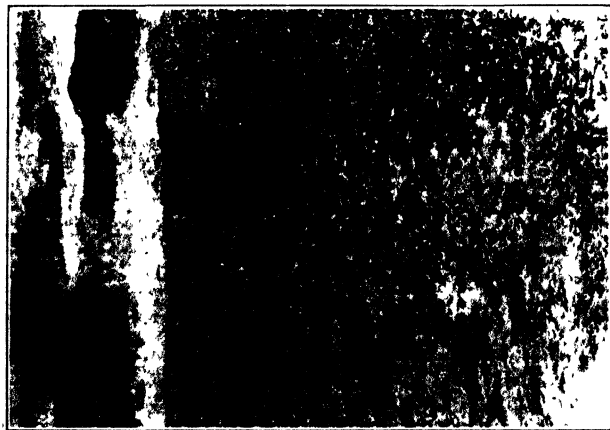
A mountain lake on île Petite Mécatina.



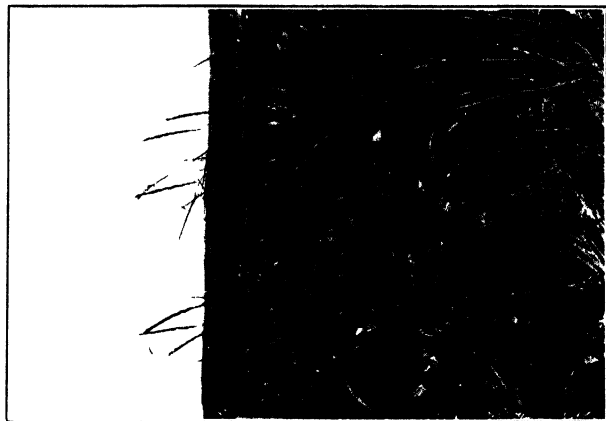
A Circular tableland at Blanc-Sablon



B Shore of Île Perroquets, showing *Heracleum lanatum* and *Filymus marianus*,
var. *villosus*



A Matted vegetation on the sand dunes at Blanc-Sablon. *Elymus* and *Senecio* are the dominant species.



B Strand vegetation, *Senecio Pseudo-Arnica* and *Elymus* are the dominant species.

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